

Chroma

Test and **Automation**
turnkey **Solution** provider™



62000D Series Bi-directional DC Power Supply

Chroma ATE Inc.

Outline

 Target Market & Opportunities

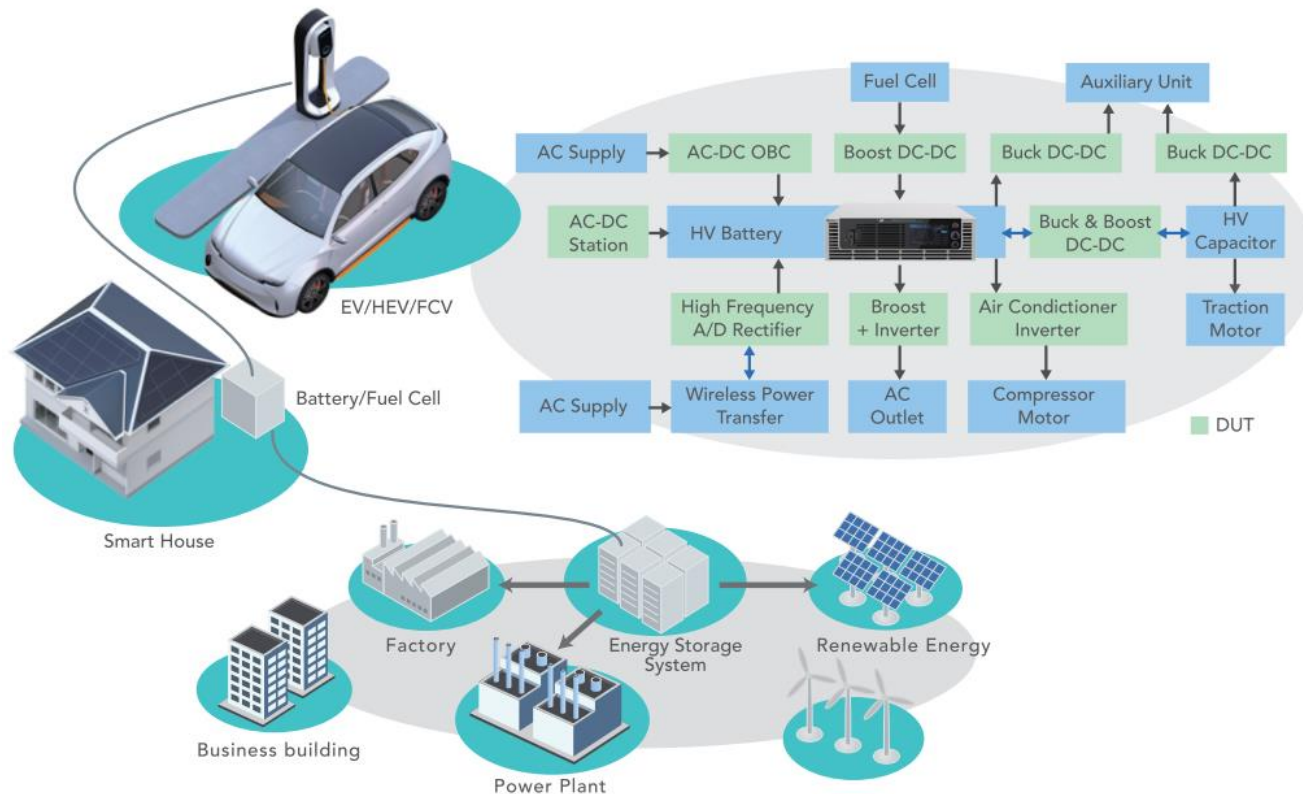
 Features

 Applications



Target Market & Opportunities

EV / HEV / PCS / Micro Grid



Outline



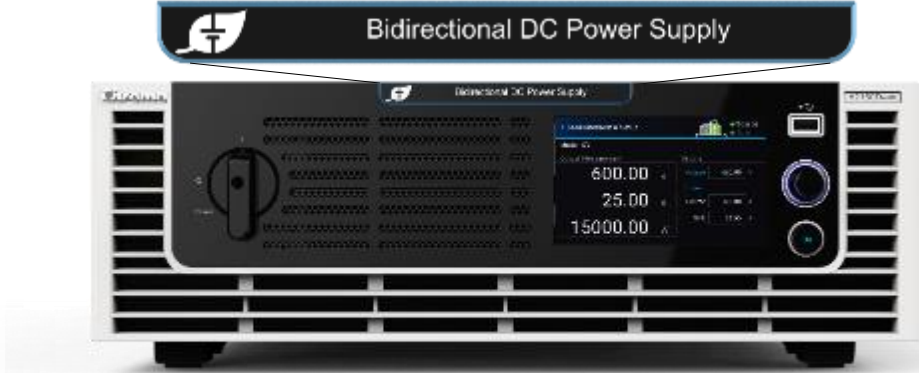
Target Market & Opportunities



Features



Applications



62000D Series Bi-directional DC Power Supply

Output Rating	100V/180A 100V/360A 100V/540A	200V/180A	300V/180A	600V/40A 600V/80A 600V/120A	1200V/40A	1800V/40A
6kW	62060D-100			62060D-600		
12kW	62120D-100	62120D-200		62120D-600	62120D-1200	
18kW	62180D-100		62180D-300	62180D-600	62180D-1200	62180D-1800



Exterior

Power Switch

USB Host



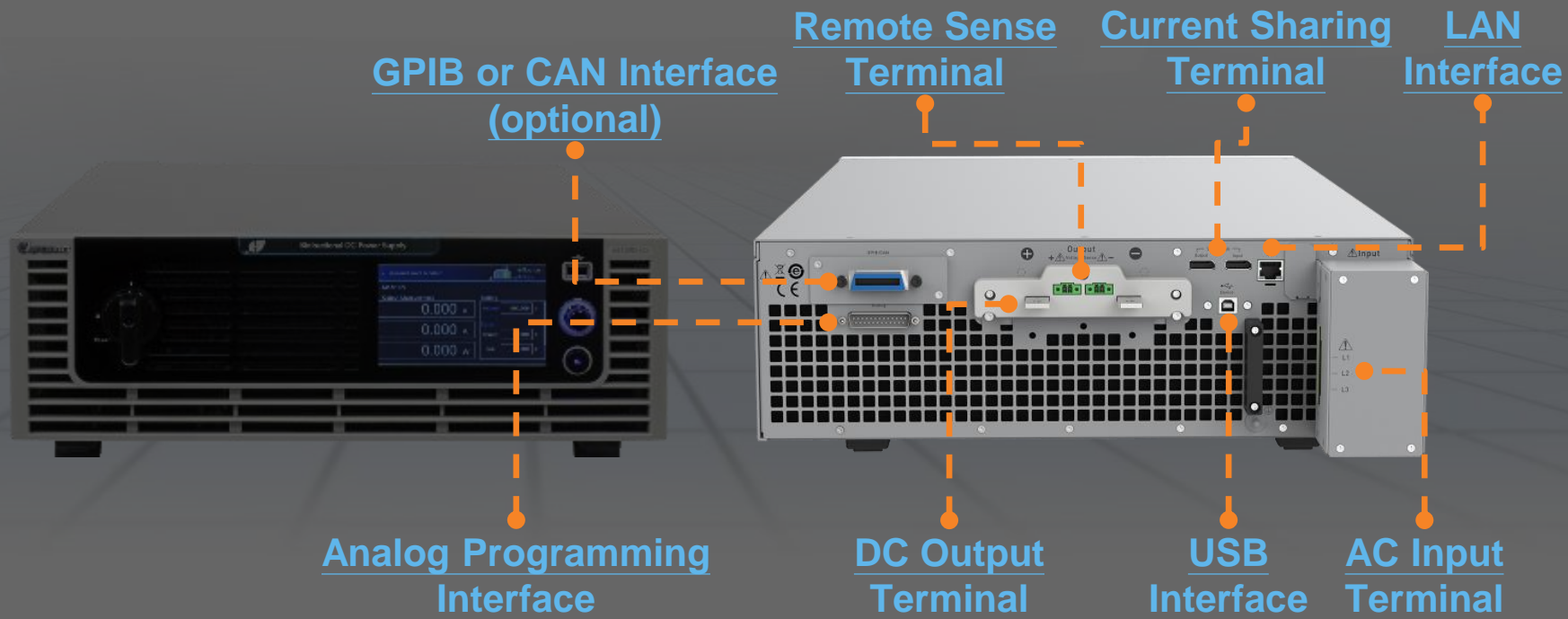
Touch Panel

Output ON/ OFF Key

Pushable Rotary Switch



Exterior



Key Features



2 in 1



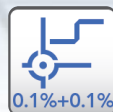
<1.5ms



18kW/3U



1800V/40A



0.1%+0.1%



LV148
LV123



2 in 1

Bi-directional
DC source + Regen. DC Load

18kW / 3U

High Power Density

LV 148/ LV 123

Automotive Test

USB/LAN/APG(Standard)

GPIB or CAN(Optional)

Interface

6k/12k/18kW

Power Range

Max. 180kW (by parallel)

Max. Power Rating

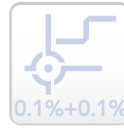
Max. 1800V

Output Voltage

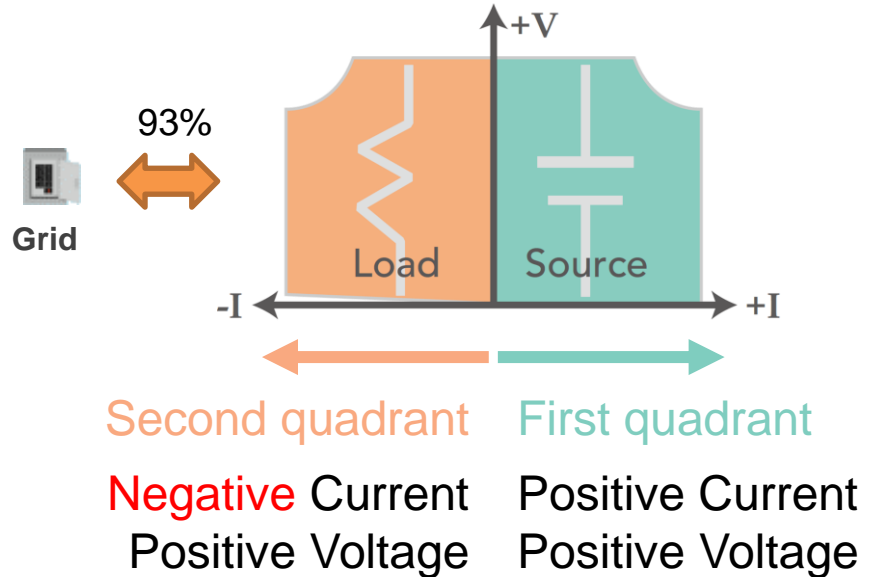
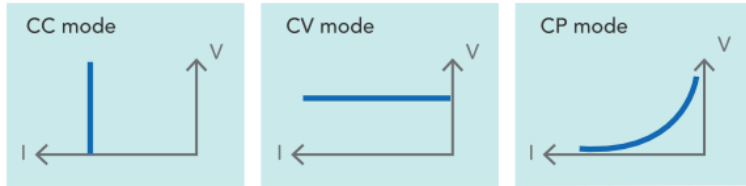
Max. 540A / 5400A(by parallel)

Output Current

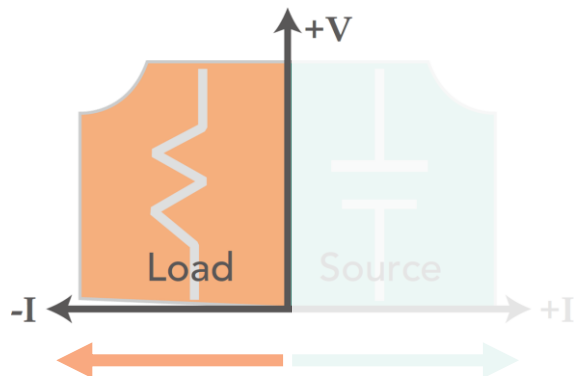
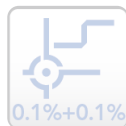
2 in 1 Bidirectional DC Power supply and Regen. DC Load



Electrical Load Function



2 in 1 Bidirectional DC Power supply and Load



Second quadrant

First quadrant

Negative Current
Positive Voltage

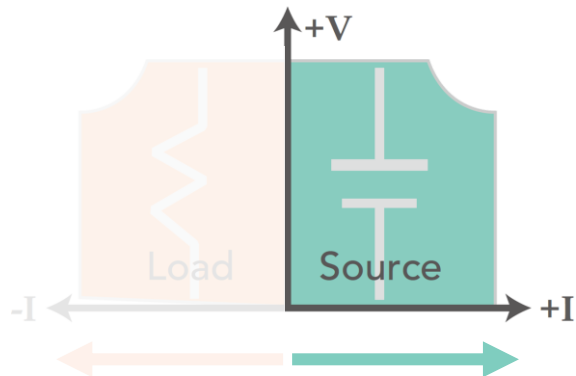
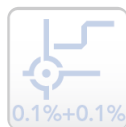
Positive Current
Positive Voltage



Coming soon

63700 DC Load

2 in 1 Bidirectional DC Power supply and Load



Second quadrant

First quadrant

Negative Current
Positive Voltage

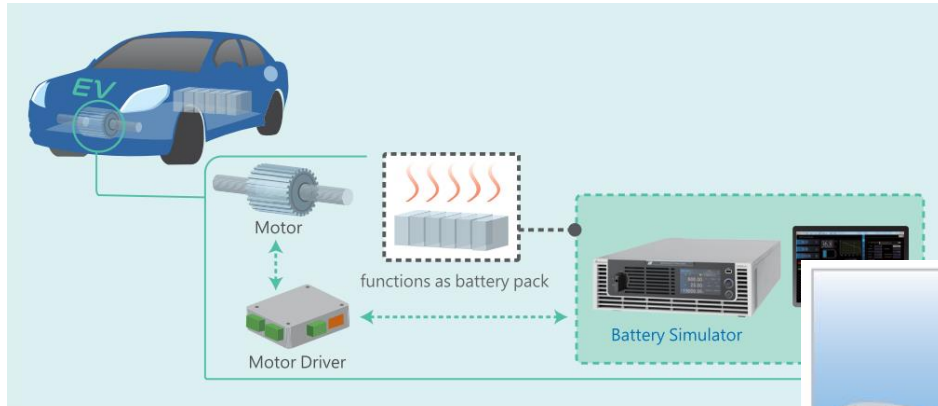
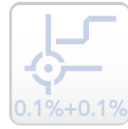
Positive Current
Positive Voltage



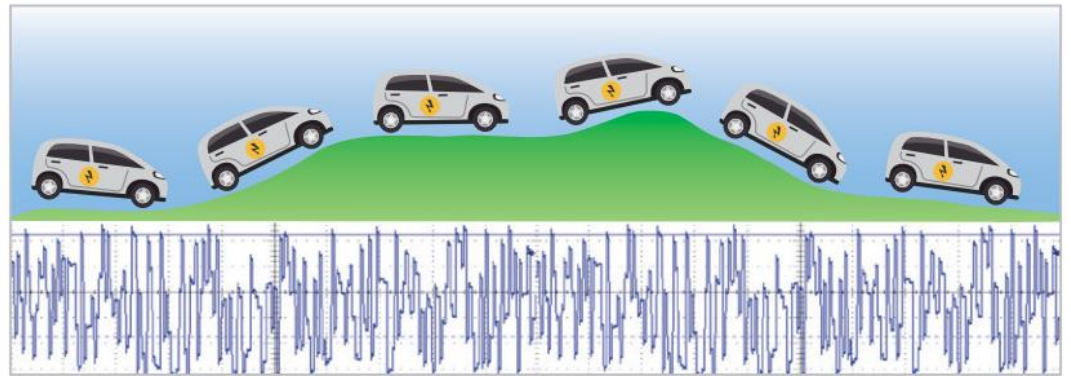
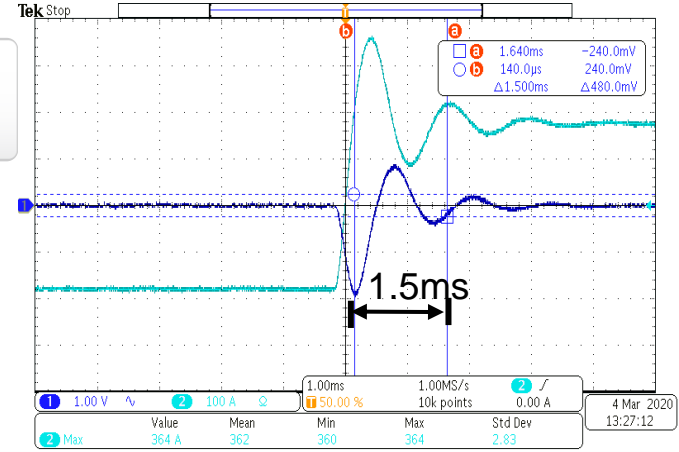
Coming soon

**62180H-600P
DC Source**

High Speed Transient Response Time < 1.5mS



Start-stop system motor driver test application

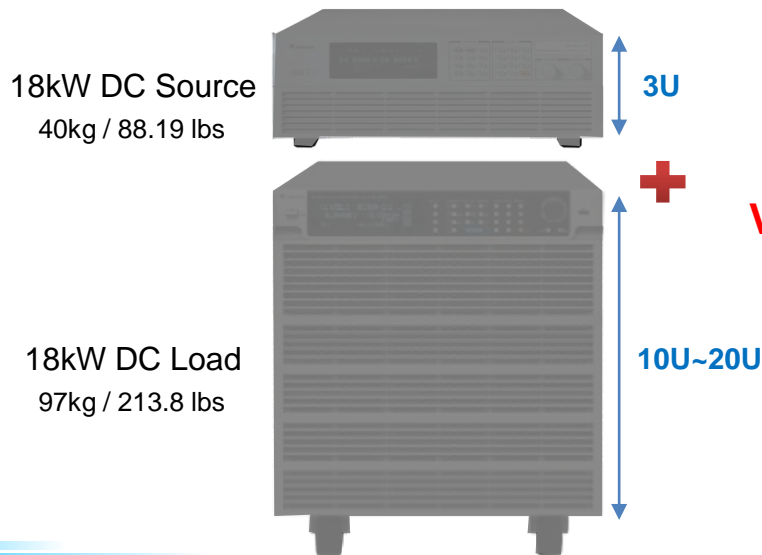


Simulation of actual driving conditions

High Power Density: 18kW in 3U



Easy master/slave parallel operation up to **180kW**



VS.

**2-in-1 Bidirectional
DC Power Supply and
Regen. DC Load**

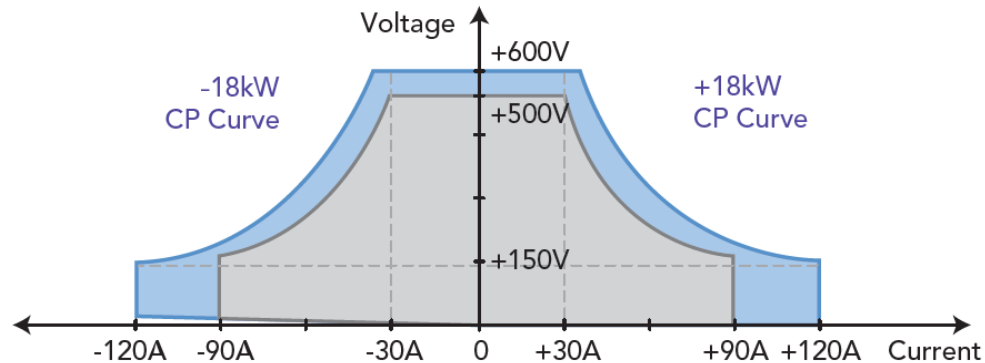


**Max. 180kW
5400A (parallel)**

Wide range of voltage & current combinations in Constant Power

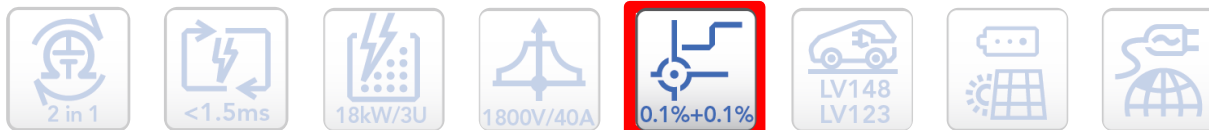


- 62180D-600 outputs 18kW/600V/120A, allowing flexible operations in different combinations
- Competitor outputs **3-time** DC power range, 62000D provides (**4-time**) bigger power range.



■ 62180D-600 operating region ■ Others

Accuracy

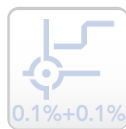


Current measurement accuracy: **$\pm 0.1\% \pm 0.1\%$ F.S.(Full Scale)**

Example : 6.6kW (330 VDC/ 20A) OBC, Power Transition Efficiency 94%

Model	Chroma		XX		XXXXX	
	62180D-600		Pxx		6xxx	
Output Voltage	0-600V		0-500V		0-500V	
Output Current	$\pm 120A$		$\pm 90A$		$\pm 90A$	
Output Power	$\pm 18kW$		$\pm 15kW$		$\pm 18kW$	
Voltage Measurement Accuracy	120V	600V	$<0.1\%$		$\leq 0.05\% + 250mV$	
	$0.05\% + 60mV$	$0.05\% + 300mV$				
Current Measurement Accuracy	24A	120A	$<0.2\%$		$\leq 0.1\% + 90mA$	
	$0.1\% + 24mA$	$0.1\% + 120mA$				
Total Power Tolerance	Min.	Max.	Min.	Max.	Min.	Max.
	6576.20046	6623.84046	6530.69	6669.49	6564.6945	6653.9968
Eff% Tolerance	93.66%	94.34%	93.01%	94.99%	93.50%	94.77%
Efficiency error range	0.68%		1.98%		1.27%	

Built-in LV 123 and LV 148 Regulations



BMW

Mercedes

Volkswagen

Mercedes-Benz

GS 95023

MBN LV 123

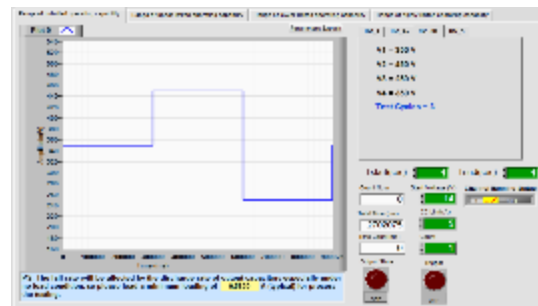
VW 80303



LV123 High voltage system components test

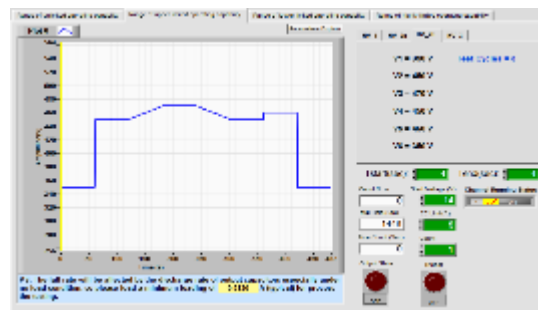
- Unlimited operating performance range
- Upper operating performance range
- Lower operating performance range
- Maximum limit operating performance range

Slew Rate 62180D-600, 60V/ms
62180D-1200, 120V/ms
62180D-1800, 180V/ms



LV148 48V system components test

- Long term over-voltage
- Transient pulses in the low operating range
- Recovery stage
- Slow increase & decrease in supply voltage
- Voltage drop reset test
- Limited function in high & low operation range
- Over-voltage operation range



Battery Simulator

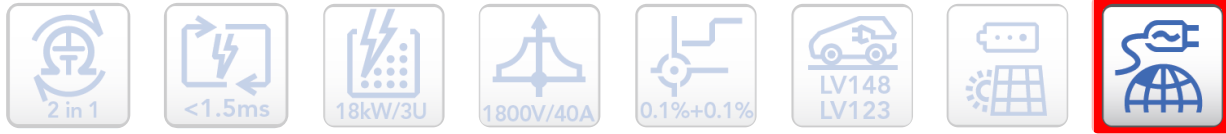


- Becomes a battery simulator via battery simulator softpanel
- Simulate operations under different **SOC** (States of Charge) conditions
- Specific battery V-I curve
- Evaluate UUT (power conversion device) for charging or discharging battery simulation
- Suitable for product testing such as car charger, energy storage device or motor driver



Battery Simulate softpanel

Universal AC Input Power (200~480VAC)

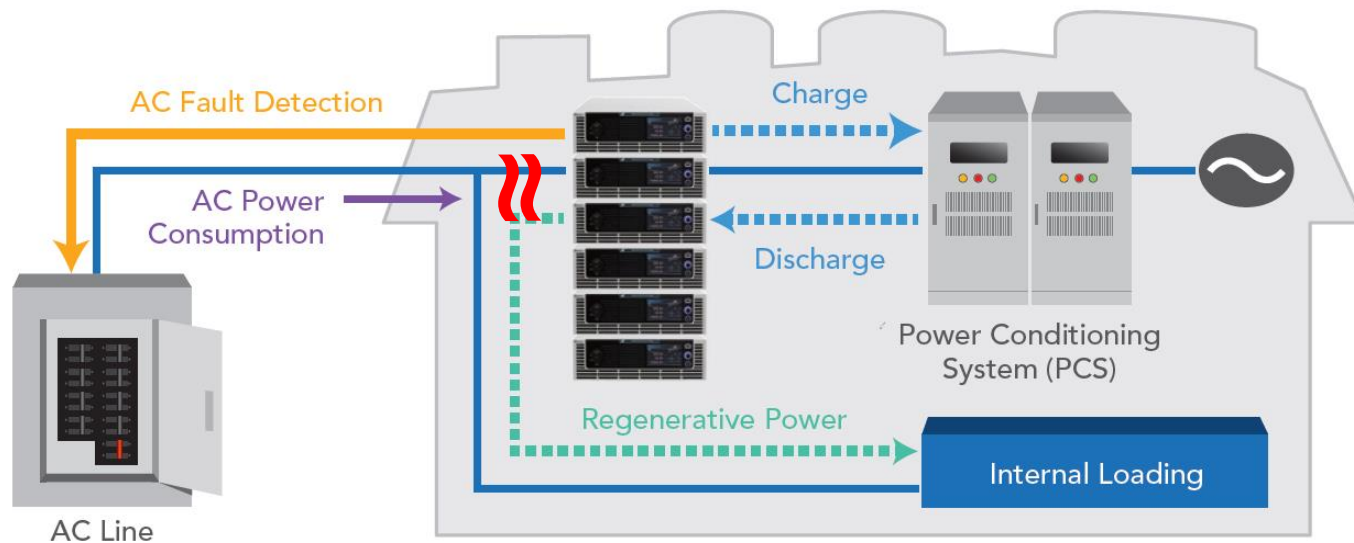


Model	62060D-100	62120D-100	62180D-100	62120D-200	62180D-300	62060D-600	62120D-600	62180D-600	62120D-1200	62180D-1200	62180D-1800
Voltage	0~100V			0~200V	0~300V	0~600V			0~1200V		0~1800V
Current	±180A	±360A	±540A	±180A		±40A	±80A	±120A	±40A		±40A
Power	±6kW	±12kW	±18kW	±12kW	18kW	±6kW	±12kW	±18kW	±12kW	±18kW	±18kW
AC Input	<p>3Φ 200Vac - 220Vac ± 10% / 3Φ 380Vac - 480Vac ± 10% / 47-63Hz (67% output power @200~220Vac input, 100% output power @380~480Vac input)</p>										

AC Input	Chroma (62000D Series)	Brand E	Brand I
220 Vac	12.06kW (67%)	7.5kW (50%)	9kW (50% of IT8000)
380 Vac	18kW (100%)	15kW	18kW (Ixxxxxx Bi-directional AC Power Only)

Safety and AC Fault Protection

- OVP, OCP, OPP, OTP, AC Fault, Fan Fail protection
- Abnormality detect in V&I input
- Actively turning off the output to ensure safe use of the grid
- **VDE** German grid connection regulations (complete with external equipment) (optional)



Built-in AC failure protection

Touch Panel

The screenshot displays the 'Meas. & Setup' screen of a Chroma power supply. The interface is dark-themed with white and blue text. At the top, there is a status bar with 'Meas. & Setup >', a red 'Load' indicator, a circuit diagram, and a 'Source' indicator. Below this is a navigation bar with icons for a lock, monitor, and refresh, and a green 'ON CV' indicator. The main display area shows three large numerical values: 500.00 V, -30.00 A, and -15000.00 W. To the right, a 'Source & Load' panel contains a 'Vset' field set to 450.00 V, and a table with 'Load' and 'Source' columns. The table shows Load values of 30.00 A and 15000.00 W, and Source values of 25.00 A and 15000.00 W.

Source & Load	
Load	Source
30.00 A	25.00 A
15000.00 W	15000.00 W

Meas. & Setup > Load +V -I +I Source

ON CV

500.00 V

- 30.00 A

- 15000.00 W

Vset 450.00 V

Load Source

30.00 A 25.00 A

15000.00 W 15000.00 W

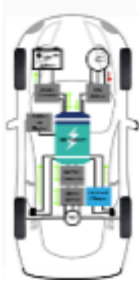
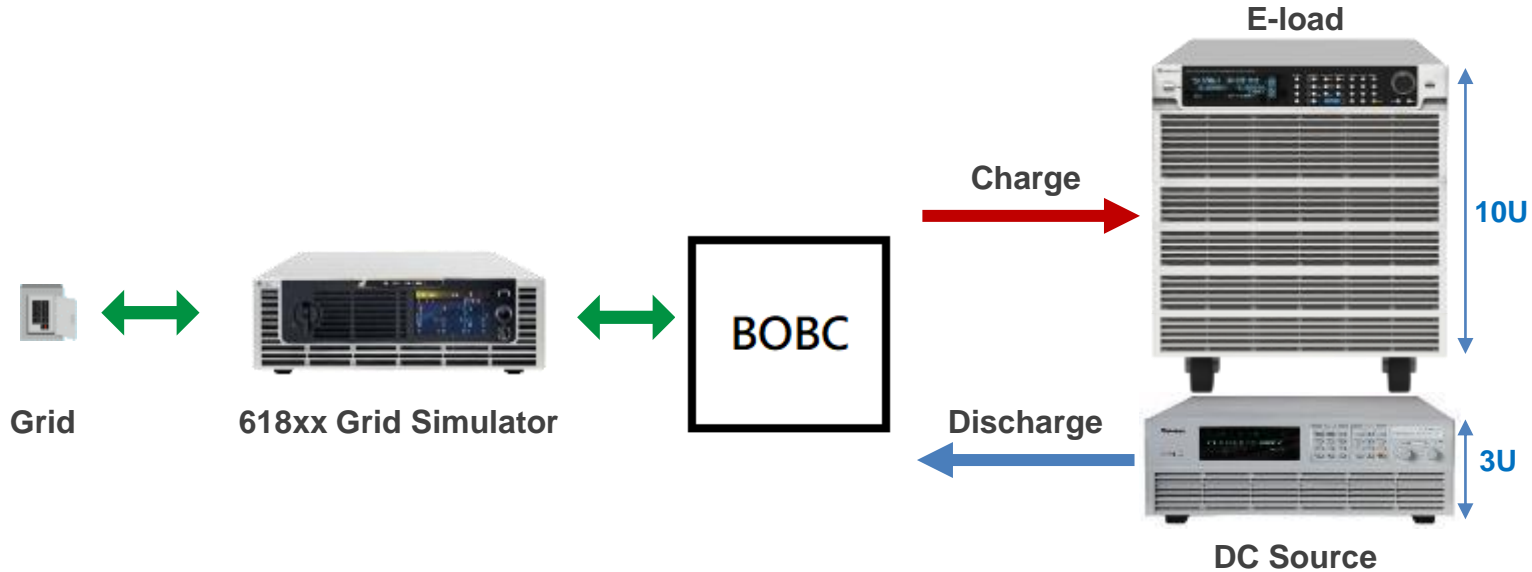
Target Market & Opportunities

Features

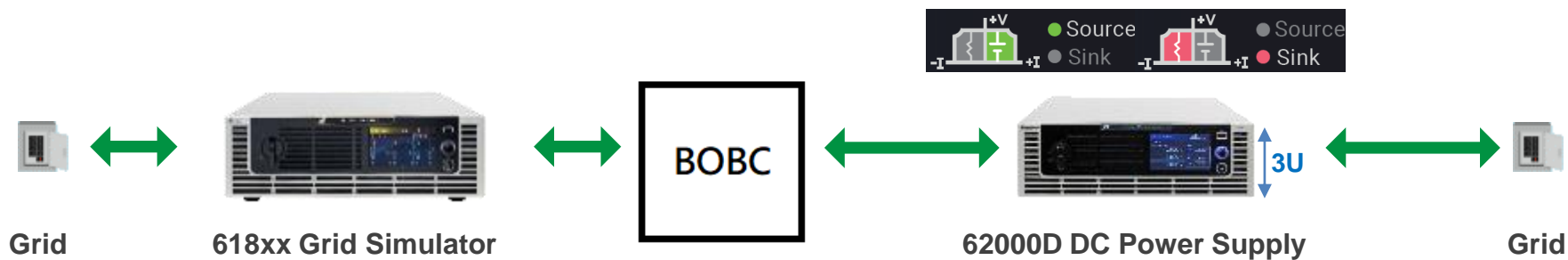
Applications



Bi-directional On-Board Charger (BOBC) Test



Bi-directional On-Board Charger (BOBC) Test



Benefit



Easy

Wiring / Configuration



Energy Recycling



Compact Size

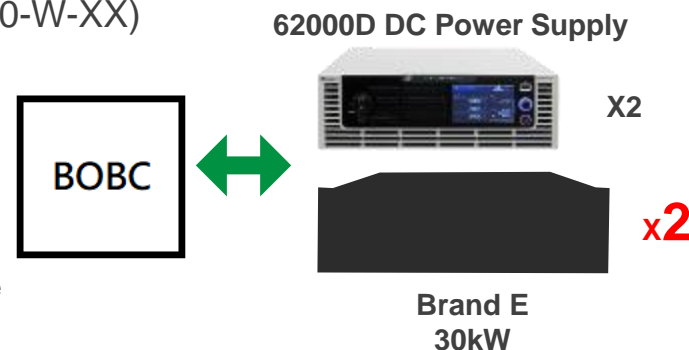


Transient Response Test
CV to CC, CC to CV

Bi-directional On-Board Charger (BOBC) Test

Example : 22kW BOBC (e.g Model No: AR-22K-380S380/540-W-XX)

- Power: 22kW
- Input Voltage: 3-phase 345~415VAC / single-phase 220±15% VAC
- Output Voltage: 250~450VDC/400~650VDC
- Output Current: **80A**
- OVP: **1105V** due to high power density to reduce charging time (11kW/22kW/40kW/200-450V&800V, BYD 850V OBC)



Model	Chroma 62180D-600	Brand E	Brand E
Voltage	0-600V	0-750V	0-1500V
Current	±120A	±120A	±60A
Power	±18kW	±30kW	±30kW
Height	3U	4U	4U
22kW OBC	2 units	1	1
OBC OVP Test	Series connection - 1200V	Insufficient voltage	1500V
OBC output current 80A	Fulfill current requirement	Sufficient current	Insufficient current

**Still needs
two units!!**

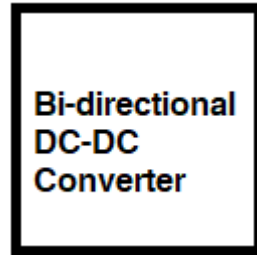
Applications

Bi-direction DC-DC Converter



E-load

DC Source



DC Source

E-load



Bi-direction DC-DC Converter



62000D DC Power Supply

62000D DC Power Supply

Benefit



Energy Recycling



Easy
Wiring / Configuration



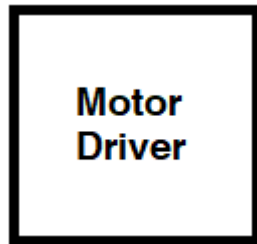
Compact Size

Motor Driver Test

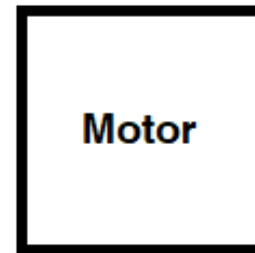
DC Source



Start up/ Speed up



Start up / Speed up



Brake



Brake

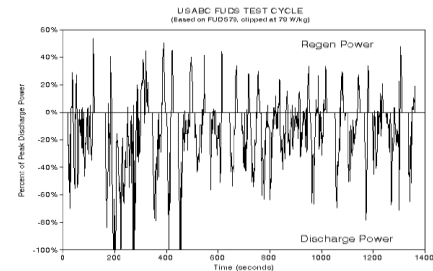


Sources: Inverter Drive

Sources: WAGO

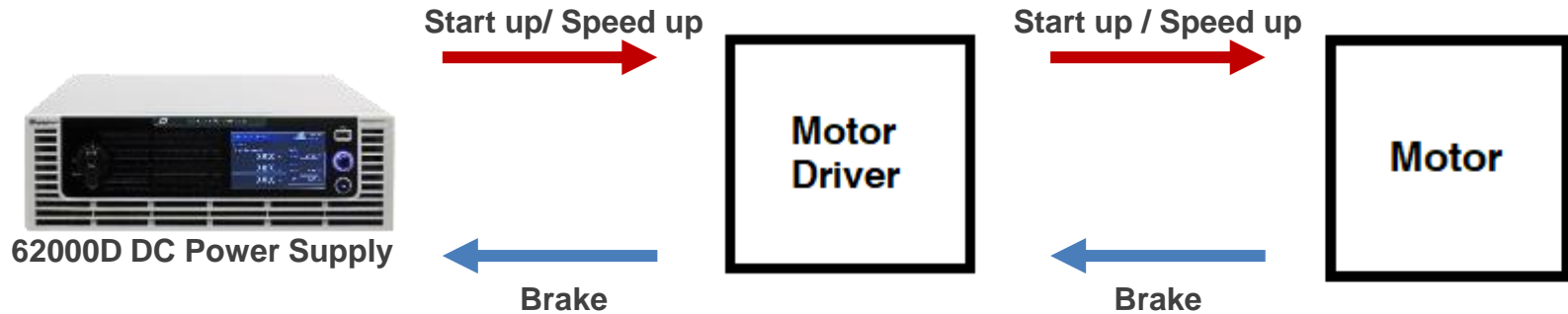
Resistor

Protection diode



Loading Profile

Motor Driver Test



Benefit

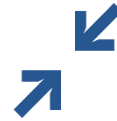


Easy

Wiring / Configuration

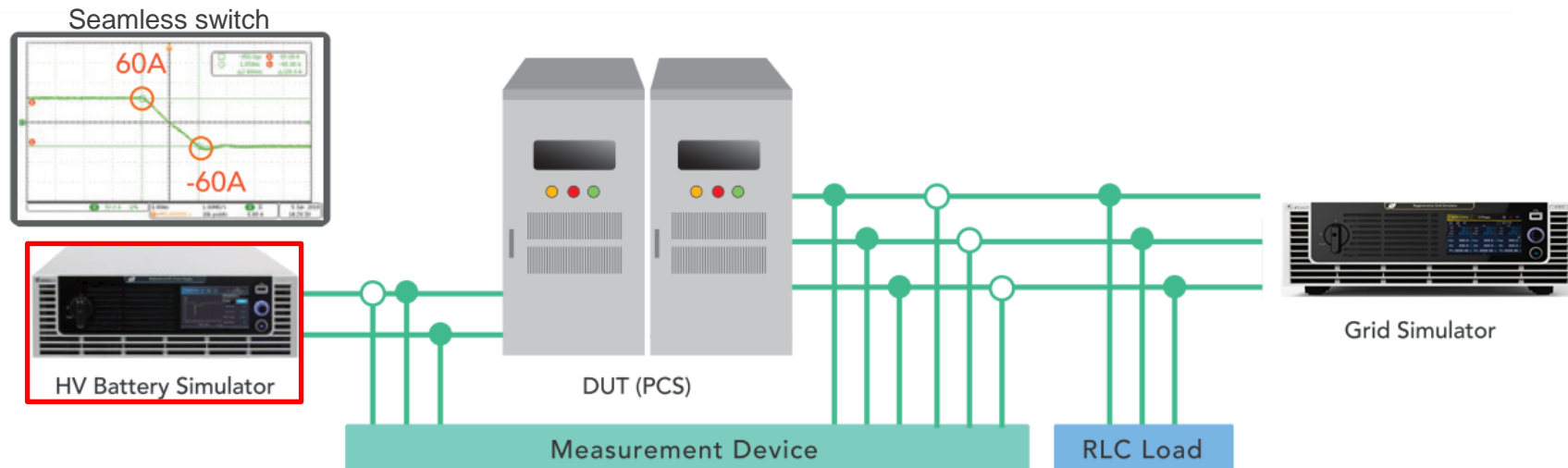


Energy Recycling



Compact Size

PCS/ESS/Hybrid PV inverter transient response test



- Power Conversion System (PCS) {
 - 48V → 62180D-100
 - Higher than 1000V → 62180D-1200/1800
- Hybrid PV inverter (48V~600V) → 62180D-600

Keep going beyond



Download Chroma ATE Solutions APP
for more information



Thank You !