



High-Performance Power Supply

Nishant Prakhar

Chroma ATE Inc.

ADD ProS TechDay Slovenia 2026 | Ljubljana 23.9.2026

Company Profile



Founded

1984

IPO

Dec. 1996

(TAIEX : 2360)

HQ

Taoyuan
Taiwan

Chairman

Leo Huang

CEO

I-Shih Tseng

Revenue 2025

US\$943.70M (Consolidated)

US\$733.74M (Parent Company)

Employees (Jan., 2026)

3,802 Group Total

3,322 Worldwide

2,252 Taiwan

Products

Test & Measurement Instruments

Automated Test Systems

Intelligent Manufacturing Systems

Test & Automation Turnkey Solutions



Group Financial Performance



Camtek
See Beyond

Metrology & Inspection
www.camtek.com

ADIVIC

RF Test & Measurement
www.adivic.com

MAS

Automation Solutions
www.mas-automation.com

Chroma

Advancing Excellence

Precision Test & Measurement
www.chromaate.com

DynaScan

Premium Visual Solutions
www.dynascandisplay.com

**innovative
nanotech**

Nanoparticles Monitoring
www.i-nanotech.com

Testar

Optoelectronic &
Semiconductor Test Services
www.testar.com.tw



Touch IntelliConnect
AIoT Solutions
www.touchaic.com



Global Operation Sites



58

Operation Sites

115

Distributors

2003



Taiwan: Hsinchu

2009



Taiwan: Kaohsiung



Taiwan: Taoyuan (Headquarters)

2008



Japan:
Shin-Yokohama/
Osaka

2018



Korea:
Pangyo

1993



United States:
Irvine, CA
Milpitas, CA
Chandler, AZ

2001



CSS, United States:
Foothill Ranch, CA
Marlborough, MA
Wixom, MI
Georgetown, TX

2016



Quantel: Singapore

Quantel Others:
India: New Delhi/ Mumbai/ Bangalore/Pune
Thailand: Bangkok
Vietnam: Hanoi/ Ho Chi Minh
Malaysia: Kuala Lumpur/ Penang
Philippines: Manila/ Cebu
Indonesia: Jakarta

1998



China/ Shenzhen

1999



China/ Beijing

2000



China/ Shanghai

2001



China/ Dongguan

2006



China/ Suzhou

2011



China/ Xiamen

2024



SmartRise Semiconductor/ Shanghai

Others: Qingdao/ Zhengzhou/ Xian/Hefei/ Chengdu/ Wuhan/ Hangzhou/ Changsha/ Hong Kong

1999



Netherlands:
Utrecht

2017



Germany:
Augsburg



HQs & Taoyuan Factory
104,141 m²

- Production Lines:
- Module Line
 - Instrument & ATS Assembly Line
 - Mechatronics System Line



Taoyuan Factory Phase II Expansion
106,233 m²

- Production Lines:
- AI Line, SMT Line
 - PCBA Line
 - Module Line
 - Instrument & ATS Assembly Line
 - Mechatronics System Line



Kaohsiung Factory
13,469 m²

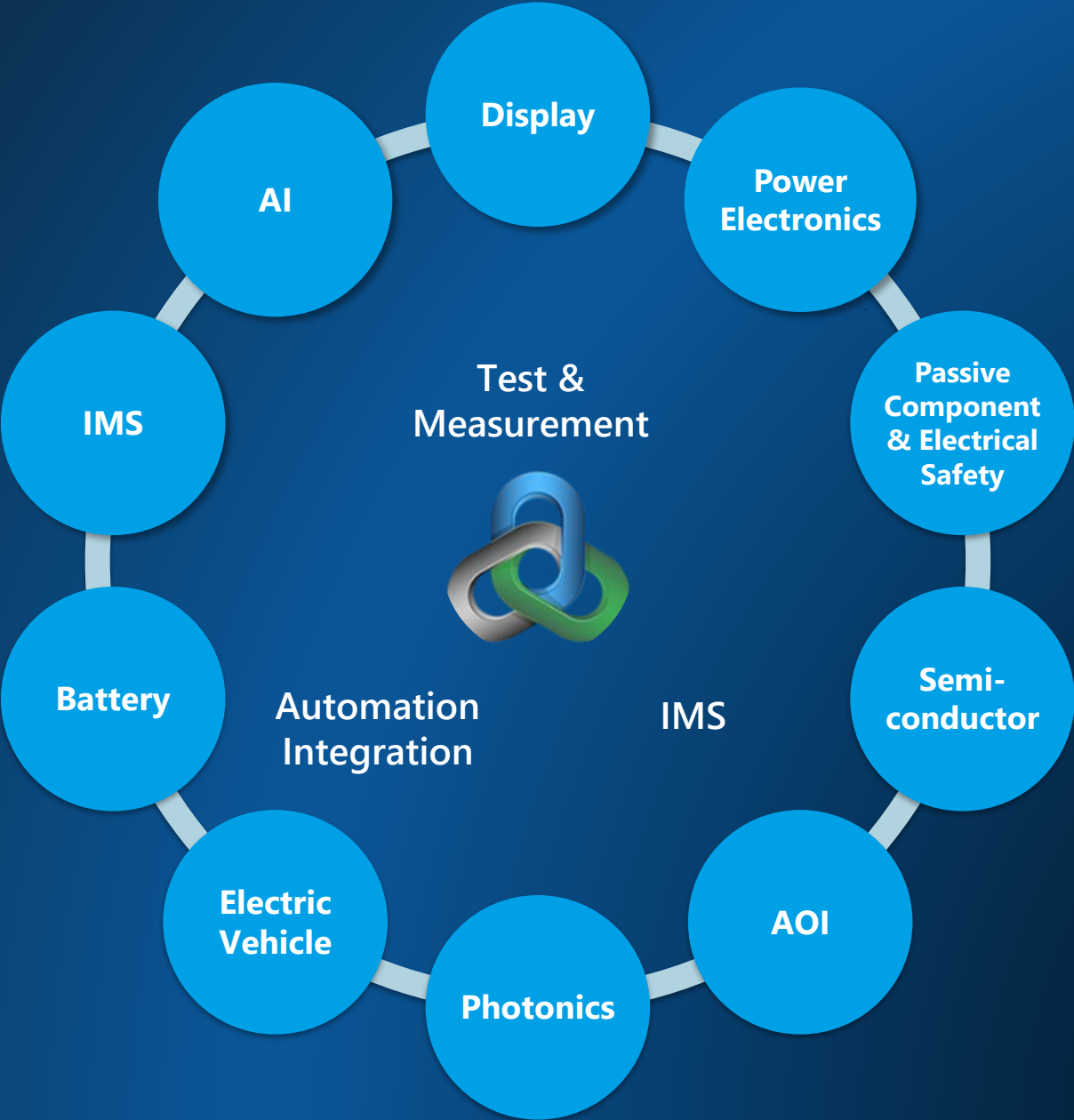
- Production Lines:
- Mechatronics System Line



Granted SGS Merit Award

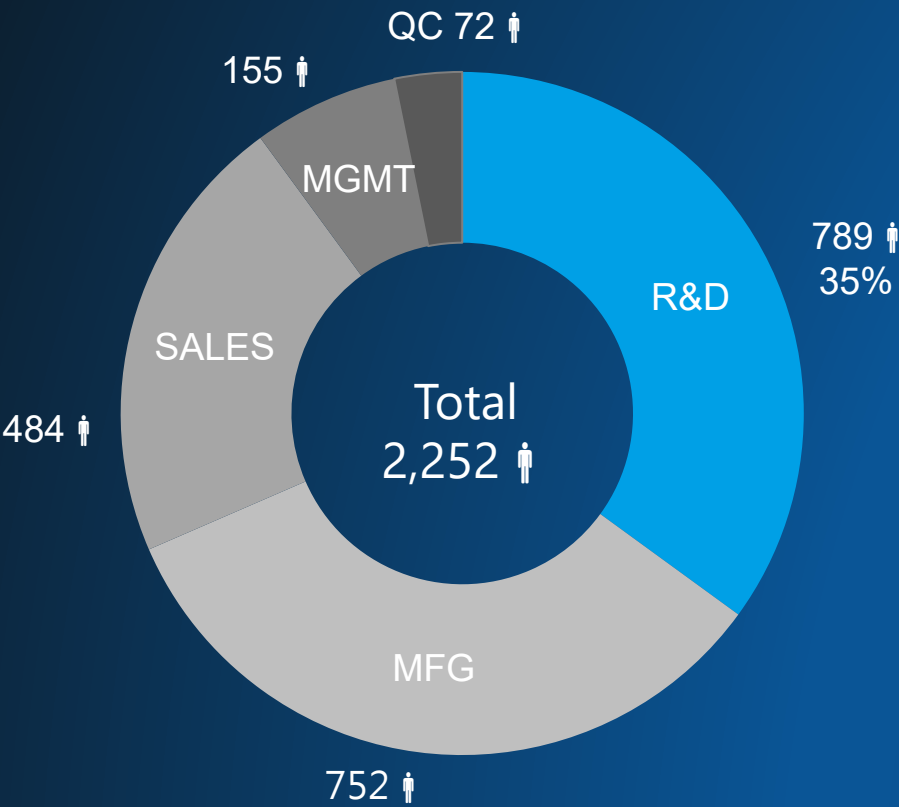
Behind Every Breakthrough: The Product Mix

730+
Models

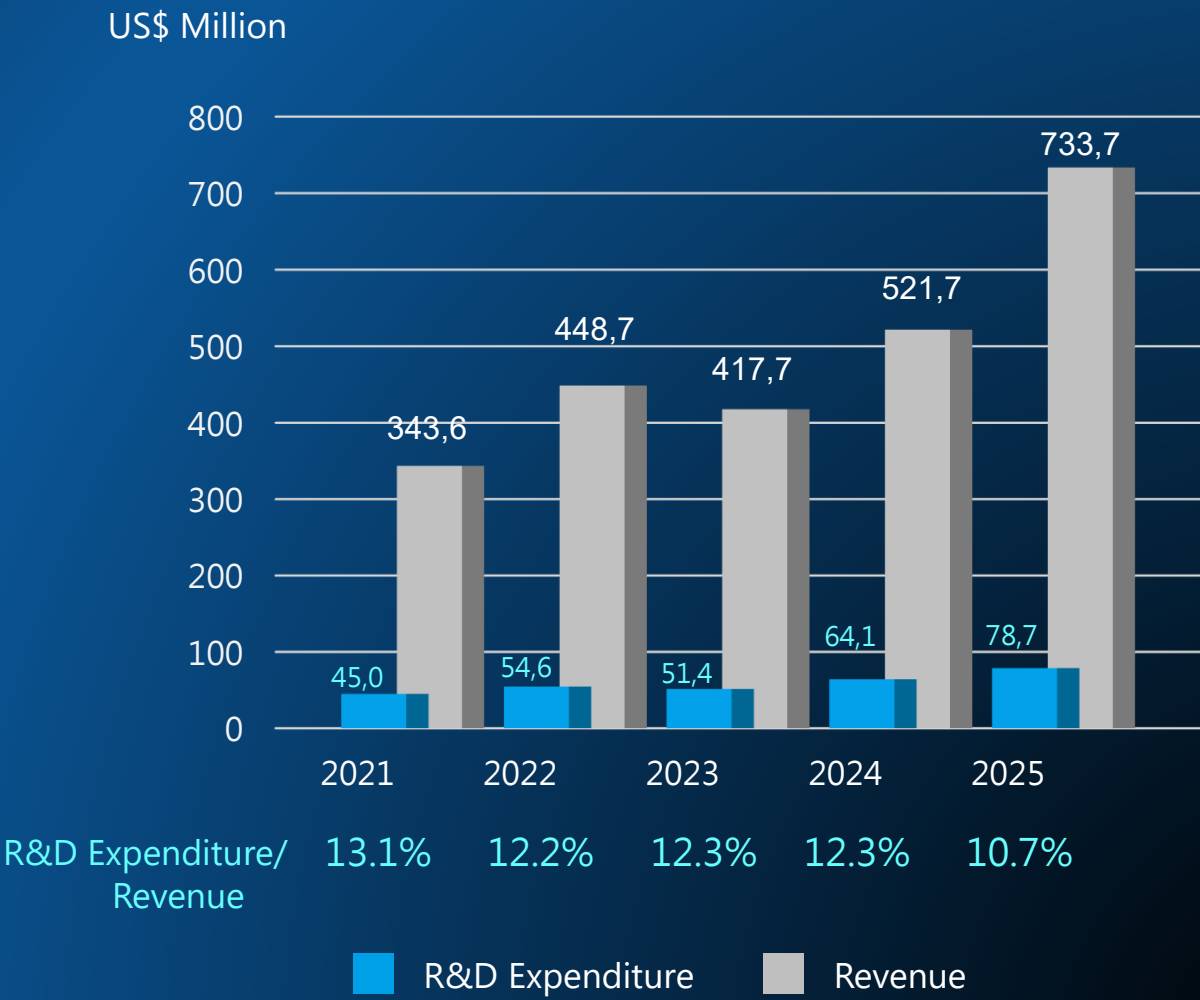


31
Product Lines

Employee Distribution
(by Function)



R&D Expenditure



Test Solutions /Technology	Optics	Electric	Thermo	Mechanical/ / Automation	Software / Firmware
Semiconductor/IC	▲	▲	▲	▲	▲
Battery Cell/Pack		▲	▲	▲	▲
Electrical Vehicle		▲	▲	▲	▲
Photonics	▲	▲	▲	▲	▲
FPD/Video & Color	▲	▲	▲	▲	▲
AOI	▲			▲	▲
Power Electronics		▲	▲		▲
Passive Component		▲	▲	▲	▲
Electric Safety		▲			▲
RF & Wireless		▲			▲

Innovative Technology Awards

Chroma



2D Color Analyzer



Bidirectional DC Power Supply



EV & EVSE charging test solution



EE AWARDS



2D/3D Wafer Metrology System



EE AWARDS



SoC/Analog Test System



Photonic IC Burn-in and Reliability Test System

Year	Award	Awarded Products
2026	Taiwan Excellence Gold Award	Chroma 7980 2D/3D Wafer Metrology System
2025	EE Awards Asia	Chroma 7980 2D/3D Wafer Metrology System
2025	CharIN Testival – Test Equipment 3rd Place	Chroma EV & EVSE charging test solution
2025	2025 Taiwan Excellence Award	Chroma 3650-S2 SoC/Analog Test System
2024	2024 TOSIA Award	Photonic IC Burn-in and Reliability Test System
2023	EE Awards Asia	Chroma 3650-S2 SoC/Analog Test System
2023	2023 Taiwan Excellence Award	Chroma 62000D Series Bidirectional DC Power Supply
2023	2023 Taiwan Excellence Award	Chroma 71803-3 2D Color Analyzer
2022	2022 Taiwan Excellence Award	3680 Advanced SoC/Analog Test System
2022	2022 Taiwan Excellence Award	61815 Regenerative Grid Simulator
2022	2022 Taiwan Excellence Award	71241 High Accuracy Universal Measuring Probe
2022	2022 Taiwan Excellence Award	MagXtract 3200 Fully Automated Nucleic Acid Purification and PCR Setup System

Emerging Technology Applications

Chroma

5G/6G



Robot



Sustainable Energy/ESS



NED



AI/Advanced Packaging



AOI



Silicon Photonics

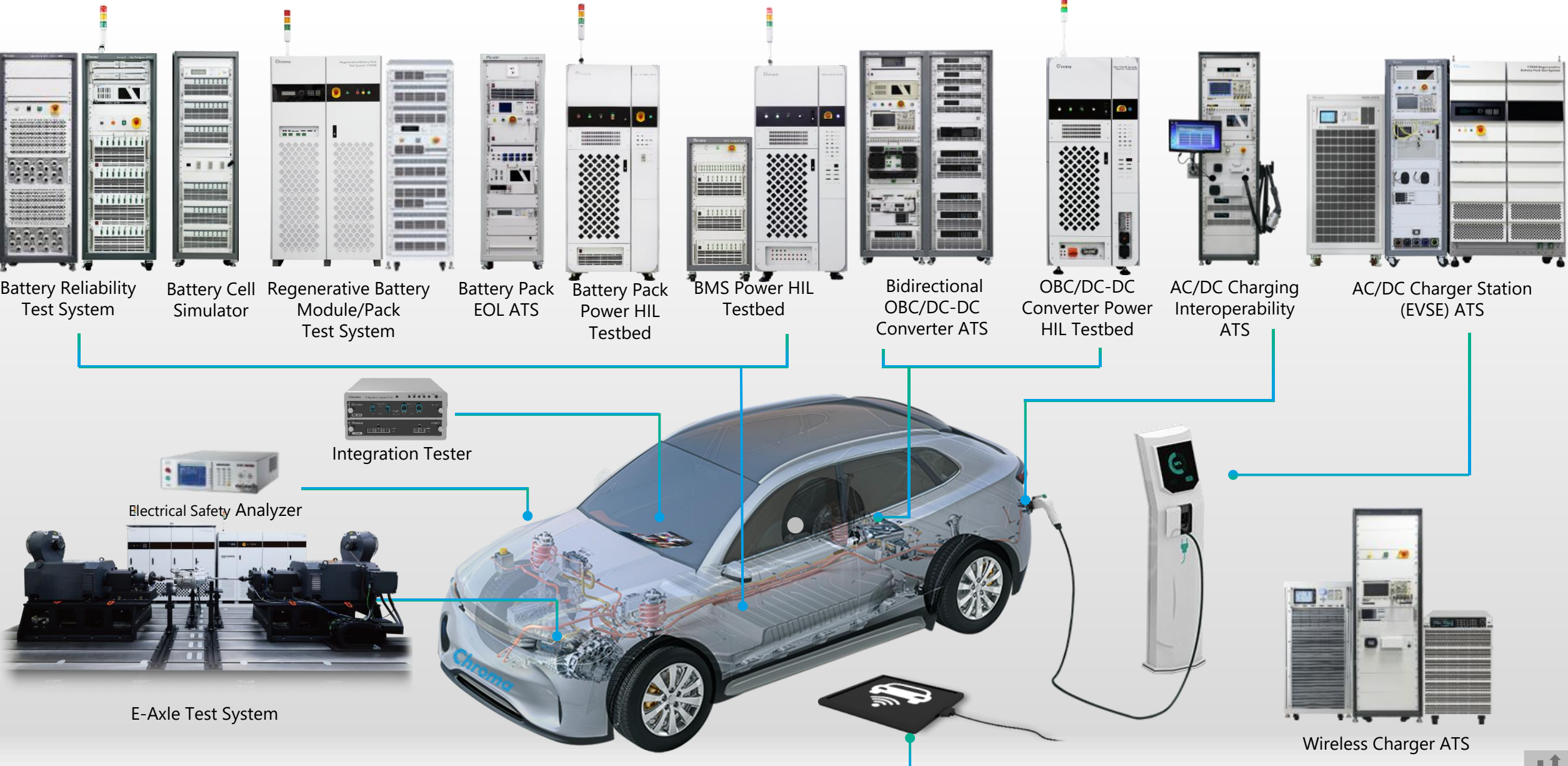


Smart EV



Smart Factory





AI Server Power and Battery Backup Unit (BBU) Test Solutions

Test Instruments

- Ultra Low Voltage DC Electronic Load
- High Power DC Electronic Load
- Regenerative DC Electronic Load
- Regenerative Grid Simulator
- Bidirectional DC Power Supply
- Digital Power Meter

Automated Test Systems

- Server DC Converter Testing System
- Server PSU/Rectifier ATS
- Server Power Shelf ATS
- Server Rack Power ATS
- HVDC Server Power ATS
- Server BBU Bidirectional Power ATS

Battery Module/Pack ATS

- Regenerative Battery Pack Test System
- Battery Pack EOL ATS

Applications

VCORE Power Supply
Server Power Supply (PSU)
Server Power Shelf
Server Power Rack
Battery Backup Unit (BBU)
Battery Management System (BMS)

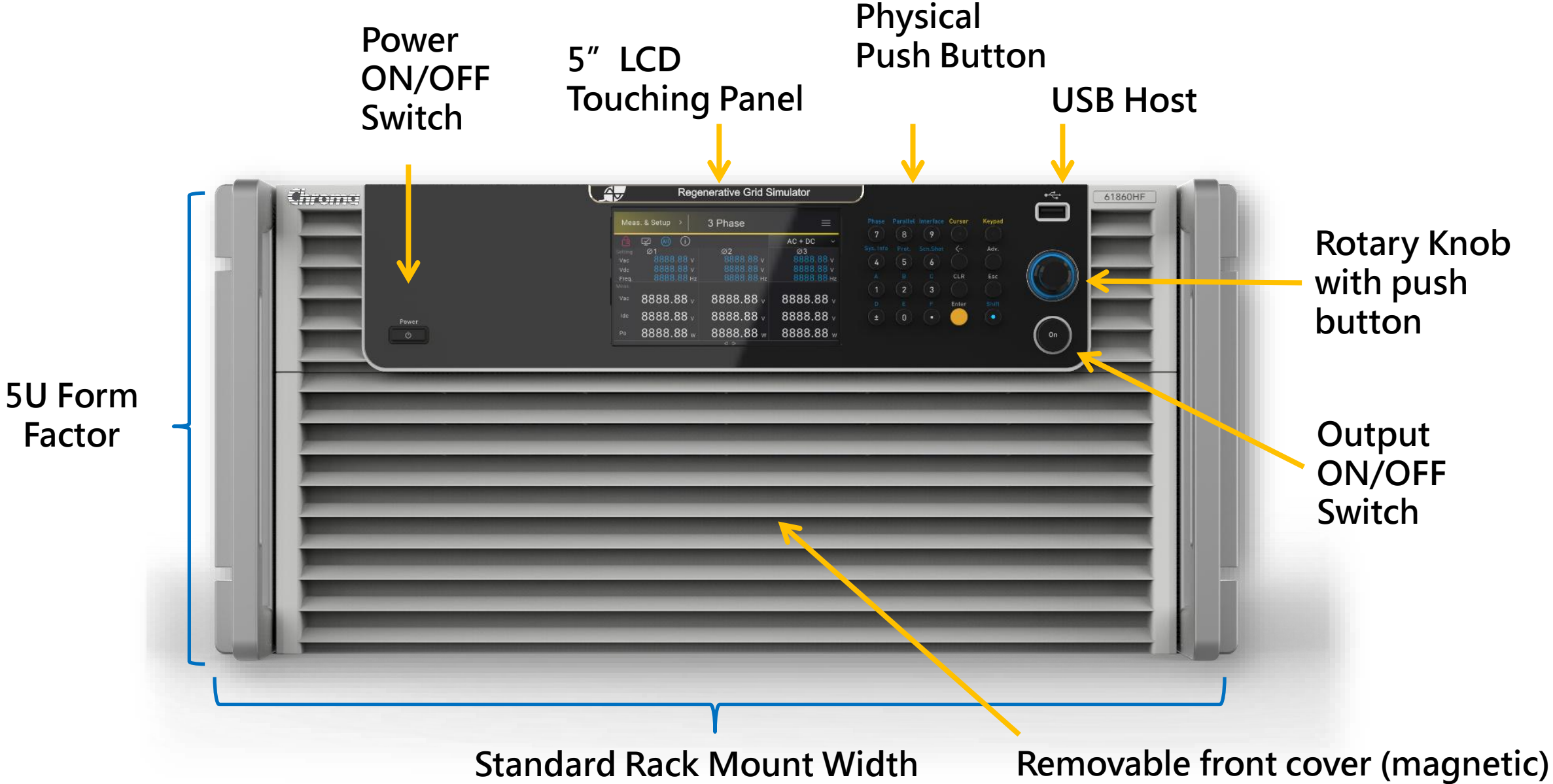




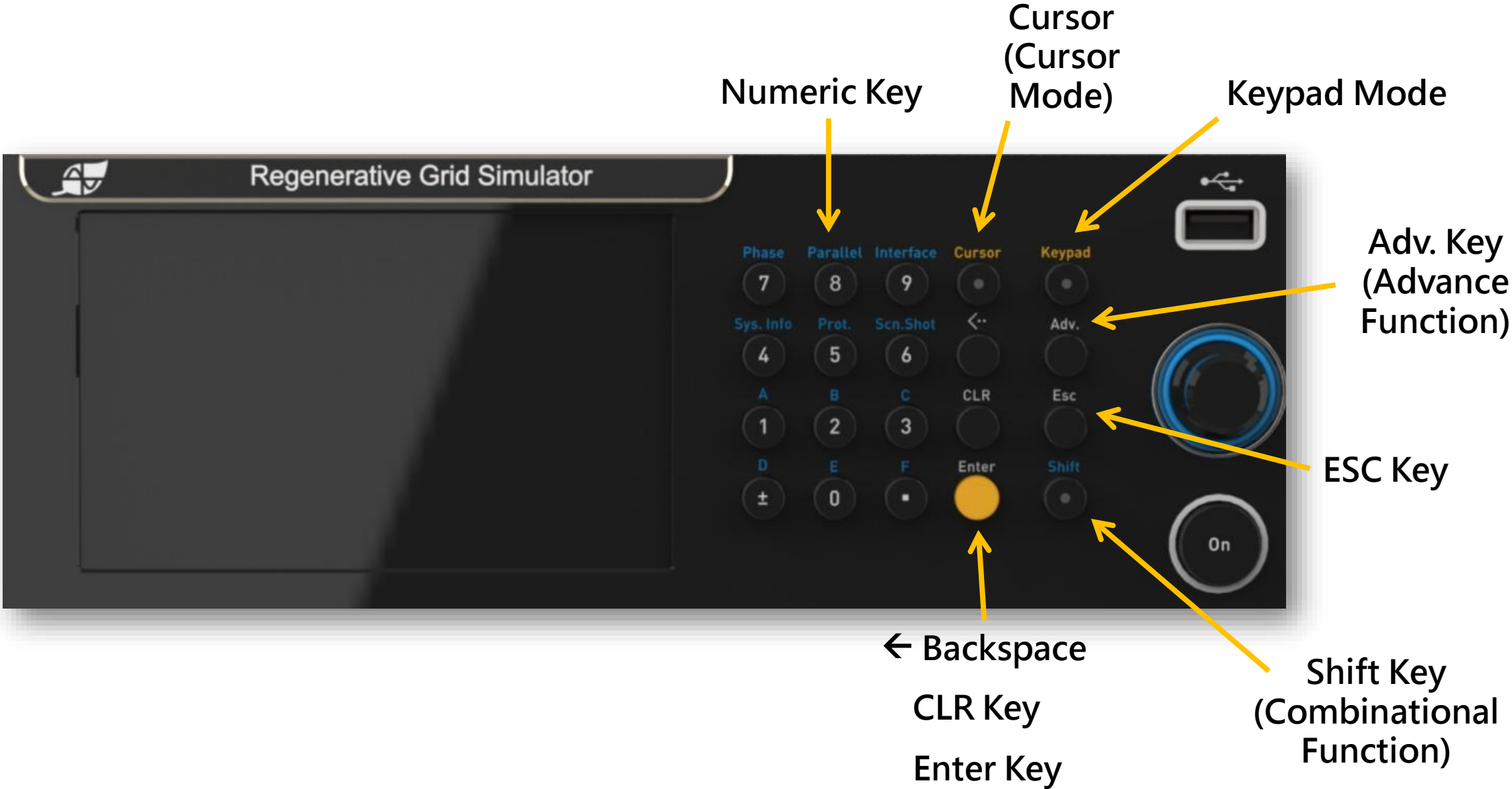
Chroma

Introduction to 61860HF Regenerative Grid Simulator

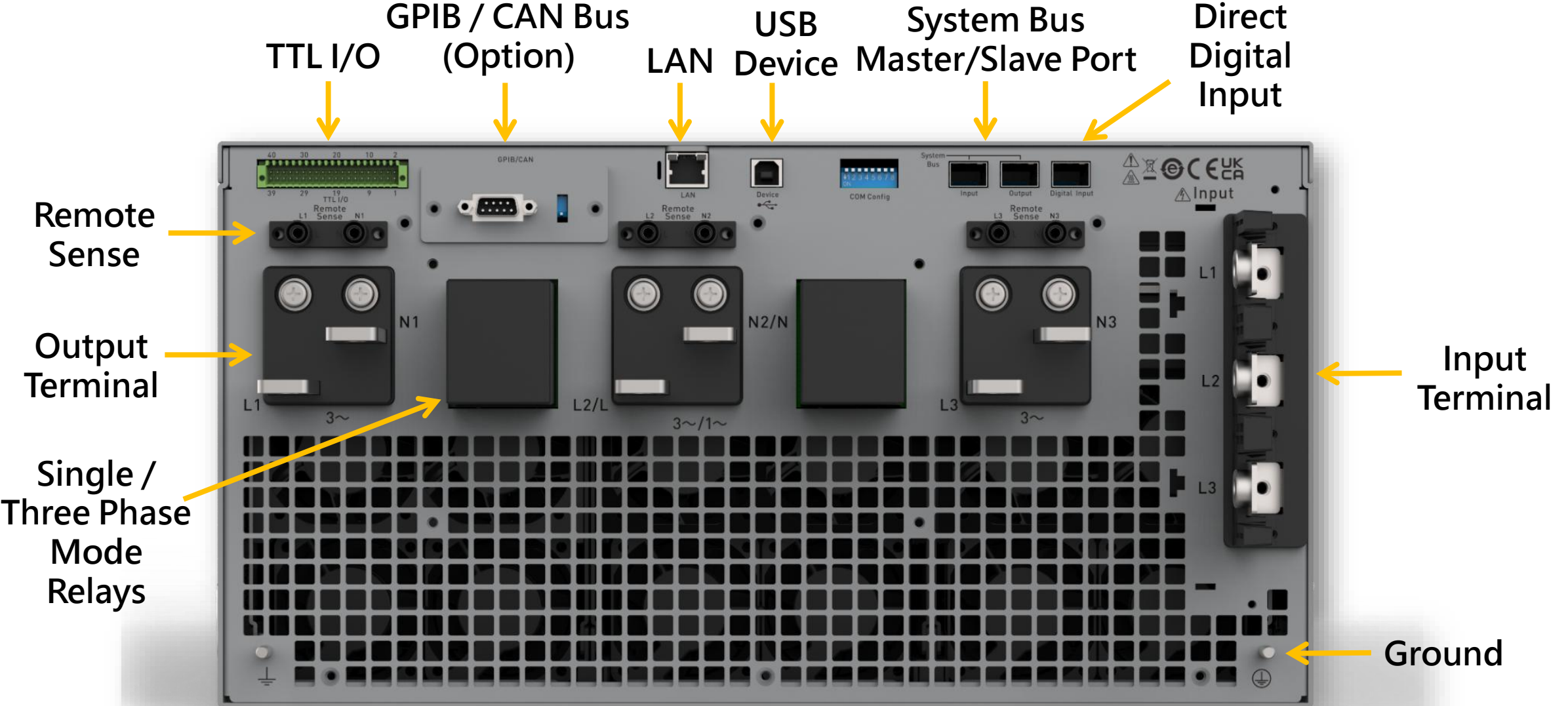
External Design (Front)



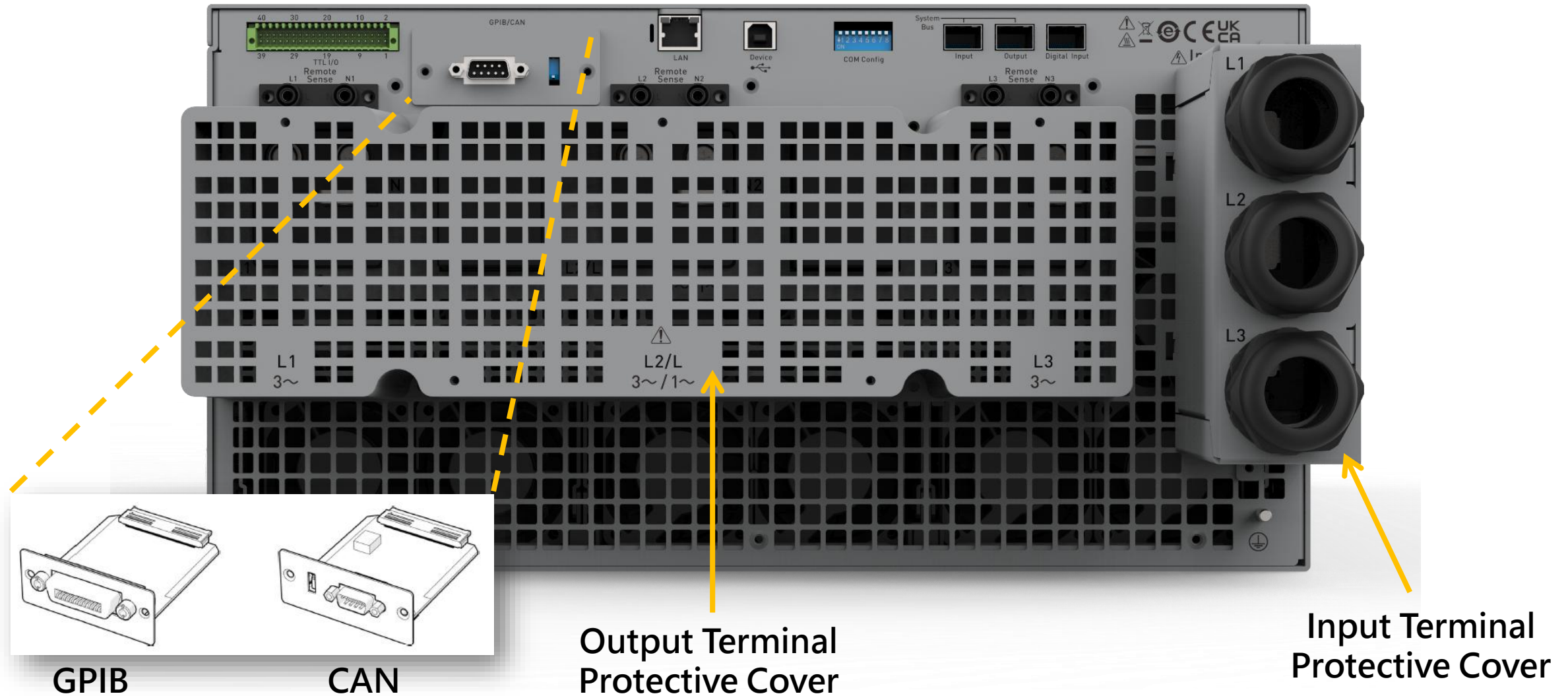
External Design (Front)



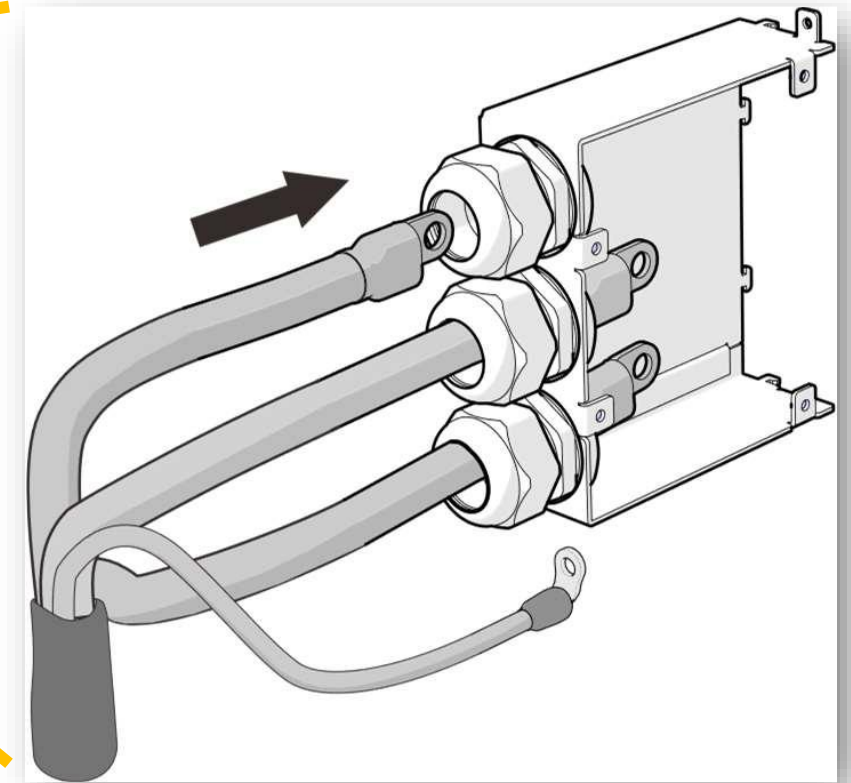
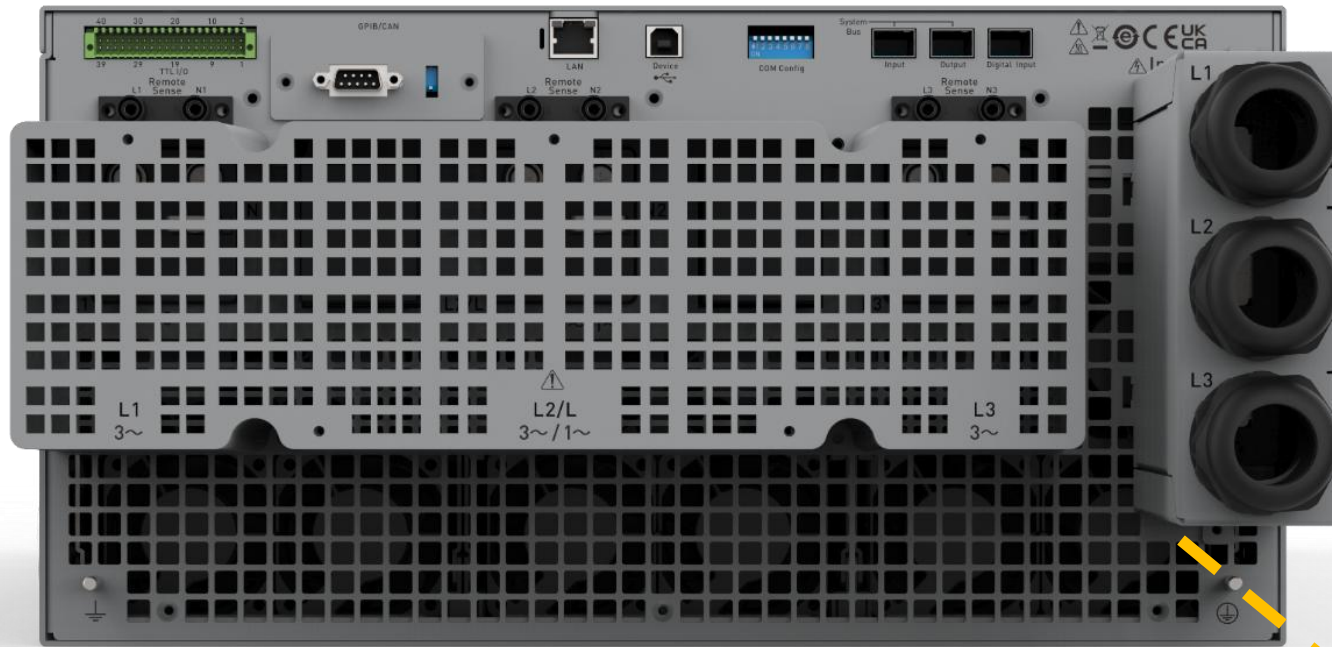
External Design (Rear)



External Design (Rear)

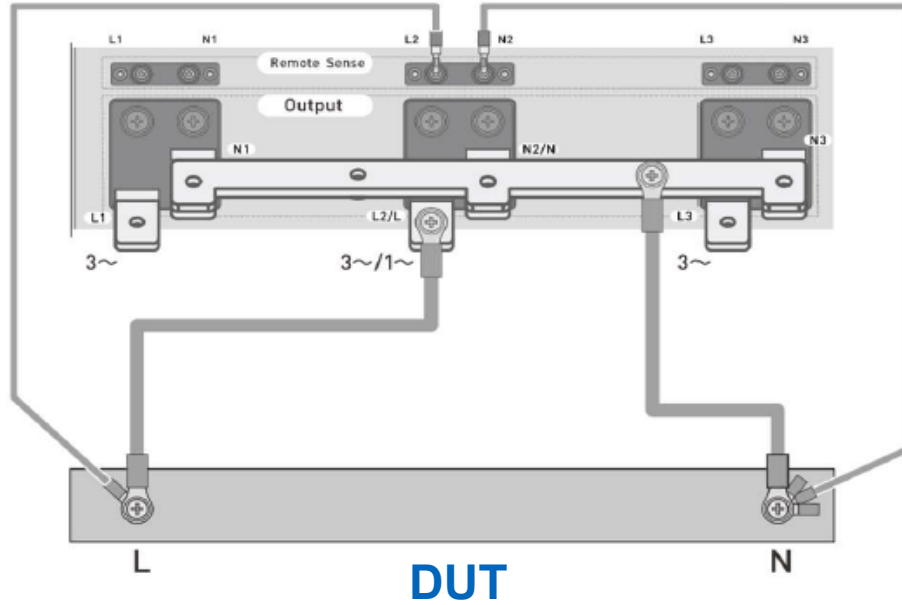


External Design (Rear)

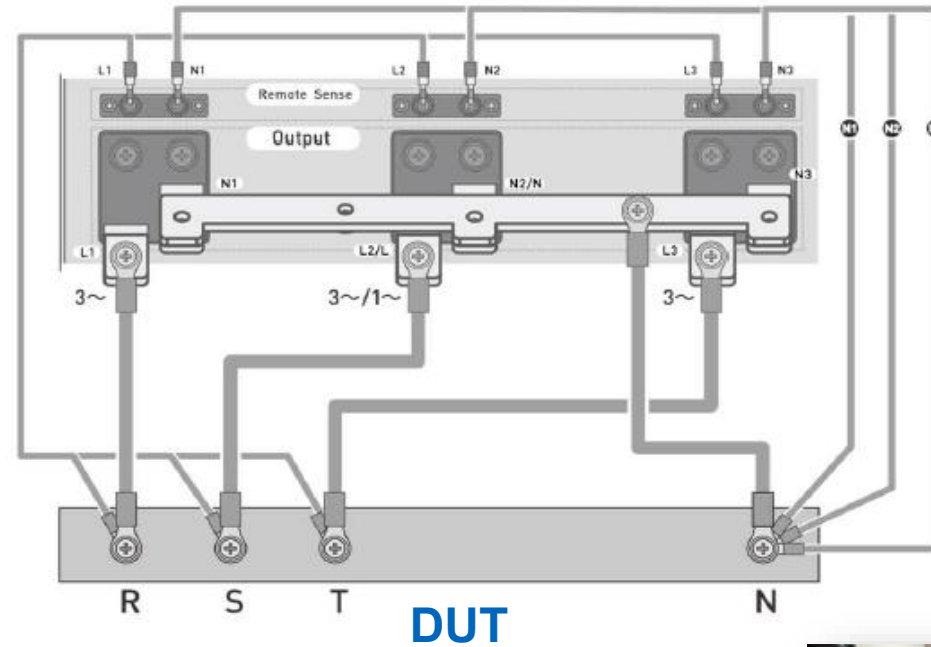


Specific input cable for
61860HF W33-001833

External Design (Rear)



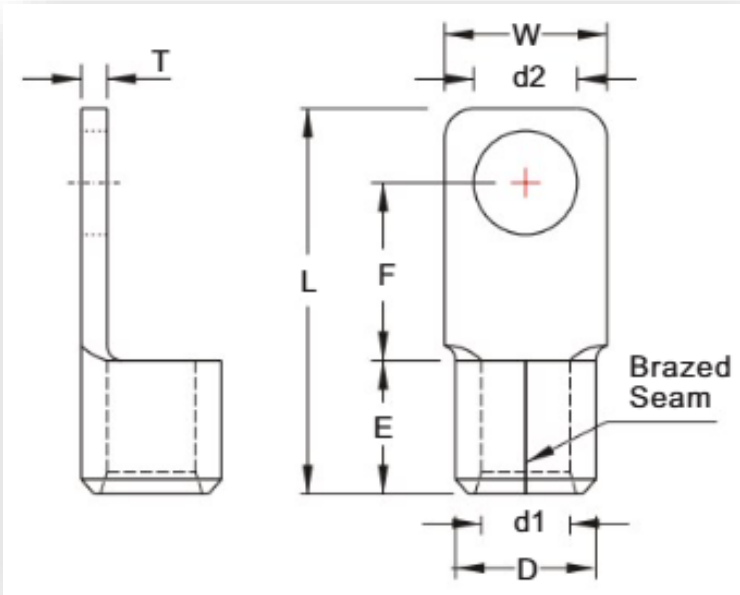
Single Phase Mode
Connection



Three Phase Mode
Connection



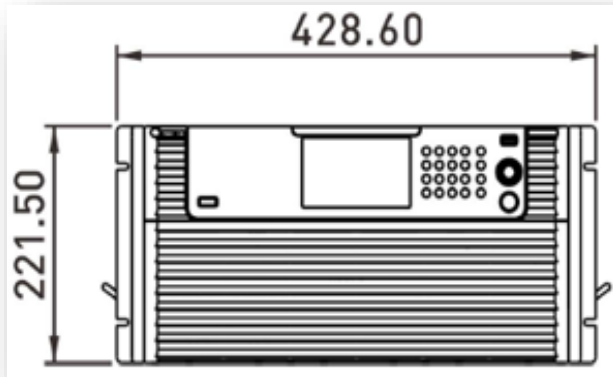
External Design (Rear)



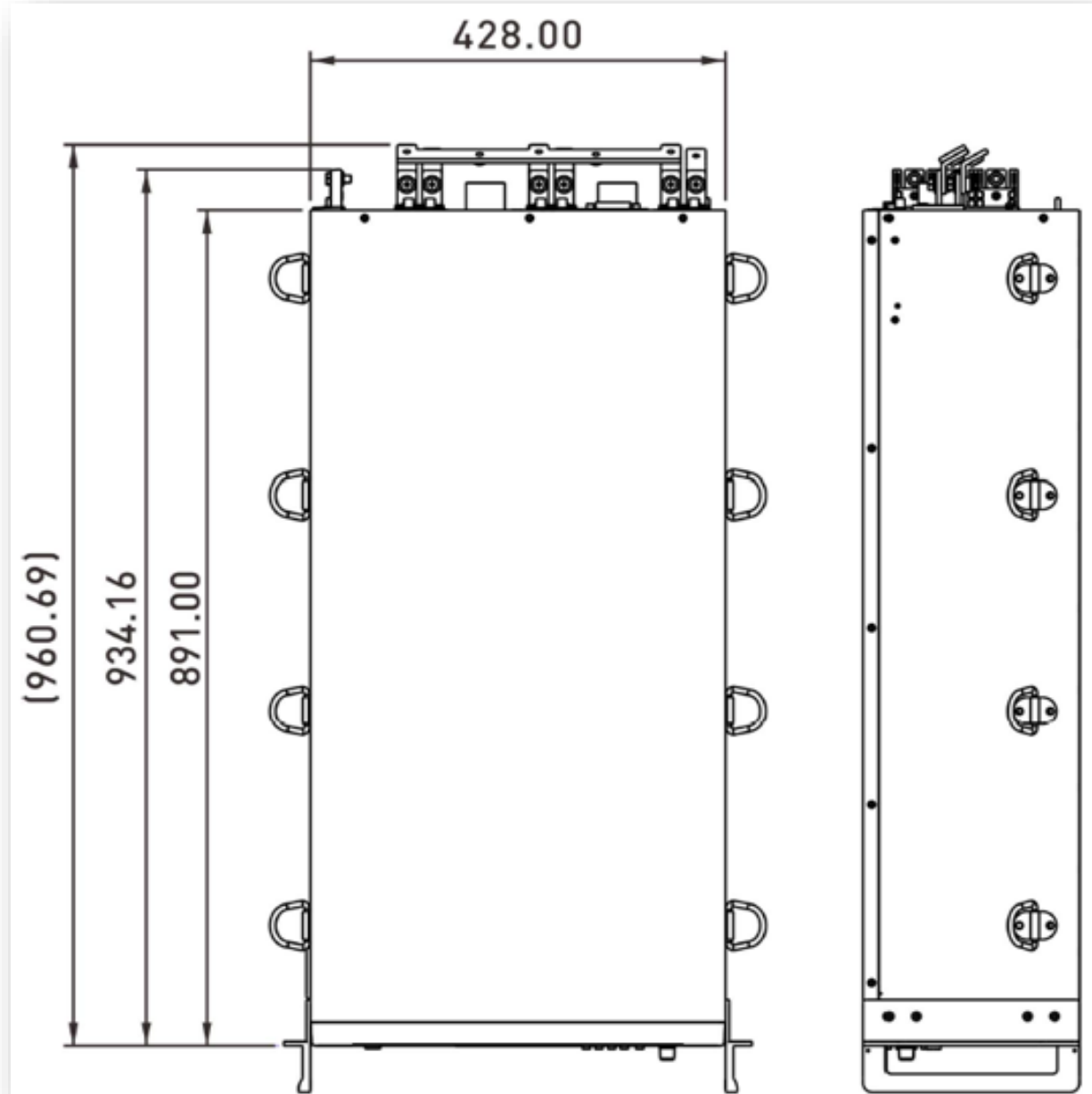
WIRE RANGE A.W.G. mm ²	ITEM NO.	STUD SIZE		DIMENSION ^{inch} _{mm}							CRIMPING TOOL	Q'TY BOX
	BRAZED SEAM	d2		W	F	L	E	D	d1	T		
3/0 A.W.G. 80 mm ²	SQNBS80-6	1/4	.252 6.4	.858 21.8	.787 20.0	1.929 49.0	.748 19.0	.768 19.5	.571 14.5	.091 2.3	IZUMI MODEL 9H-150, 12#A WITH DIE INDEX NO:80 OR K.S. MODEL KH-120 KH-150 WITH DIE INDEX NO:70	50
	SQNBS80-8	5/16	.331 8.4									
	SQNBS80-10	3/8	.413 10.5									
	SQNBS80-12	1/2	.512 13.0									

Suggest to implement SQNBS80-8 output terminal (see spec) for 61860HF output cable for adequate spacing between output terminal and neutral.

External Design (Rear)



Weight: 120kg



Product Specifications

Model	61830HF	61845HF	61860HF
AC Output Rating			
Output Phase	1 or 3 selectable		
Max. Power	30kVA	45kVA	60kVA
			54kVA*
Each Phase	10kVA	15kVA	20kVA
			18kVA*
Voltage			
Range	0 - 400V _{LN} / 0 - 692.8V _{LL}		
	0 - 460V _{LN} * / 0 - 796.7V _{LL} *		
Accuracy	0.1% + 0.1%F.S.		
Resolution	0.1V		
Distortion	< 0.5% @50/60Hz < 0.8% @30 - 100Hz		
Line regulation	0.10%		
Load regulation	0.20%		
Maximum Current (1-Phase Mode)			
RMS	120A	180A	240A
Peak	360A	480A	600A
Maximum Current (each phase in 3-Phase Mode)			
RMS	40A	60A	80A
Peak	120A	160A	200A

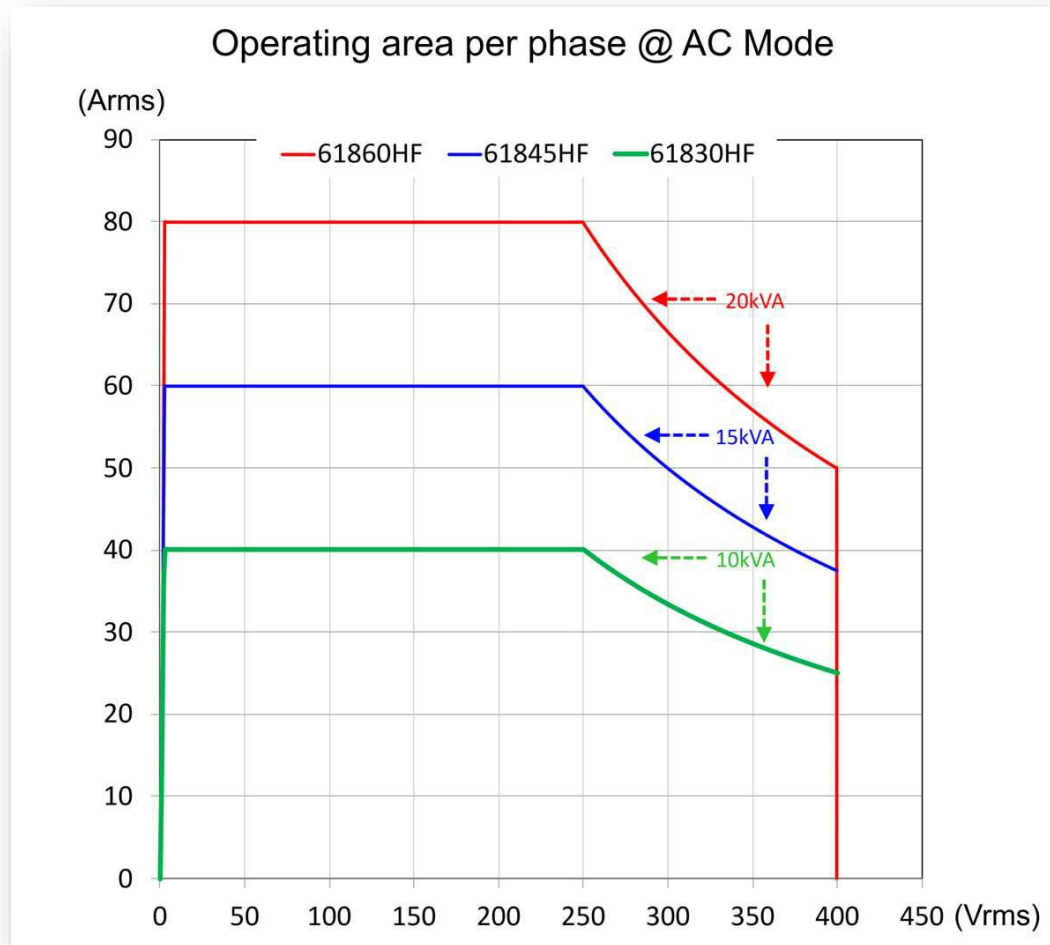
*Specifications shown when Extend Vout mode is enabled. Energy recovery is not supported when Extend Vout mode is enabled.

Product Specifications

Frequency			
Range	DC, 30 - 100Hz		
Accuracy	0.01%		
Resolution	0.01Hz		
DC Output (1-Phase Mode)			
Max. Power	30kW	45kW	60kW
			54kW*
Voltage	-566V _{dc} - 566V _{dc}		
	-651V _{dc} - 651V _{dc} *		
Accuracy	0.1% + 0.25%F.S.		
Current	90A	135A	180A
DC Output (3-Phase Mode)			
Max. Power	10kW	15kW	20kW
			18kW*
Voltage	-566V _{dc} - 566V _{dc}		
	-651V _{dc} - 651V _{dc} *		
Accuracy	0.1% + 0.25%F.S.		
Current	30A	45A	60A
Harmonic Synthesis Function			
Harmonic Range	up to 50 harmonics order @50/60Hz fundamental frequency		

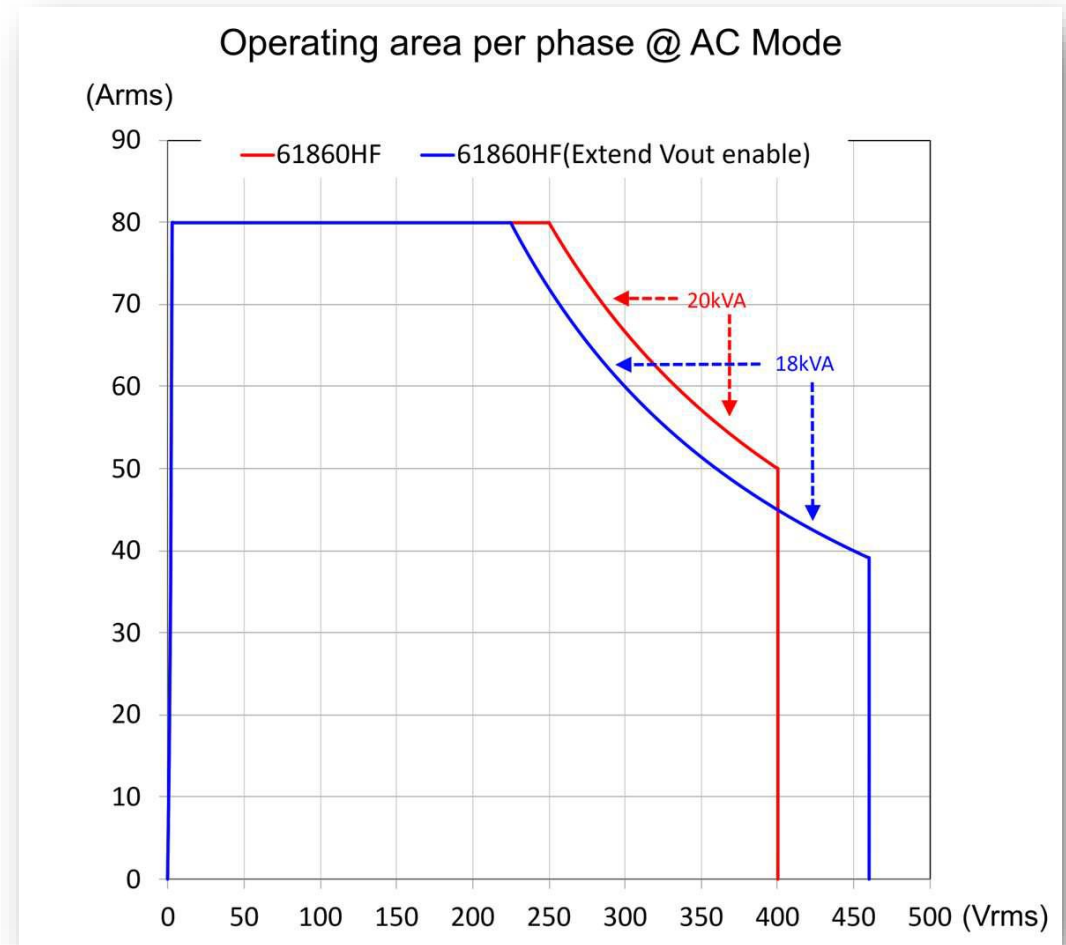
*Specifications shown when Extend Vout mode is enabled. Energy recovery is not supported when Extend Vout mode is enabled.

Product Specifications



[Extend Vout] function is disable

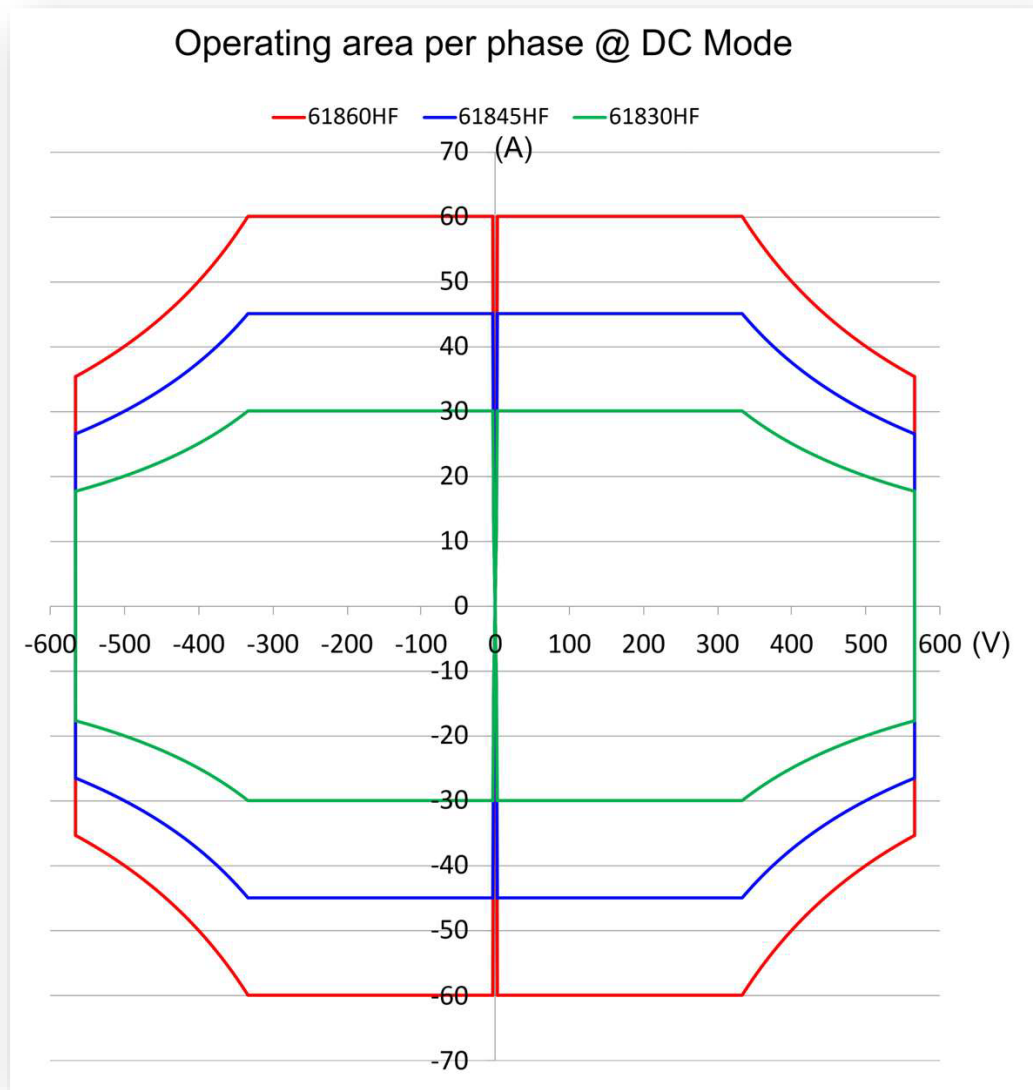
- The output voltage is 400VLN
- Regenerative feature is functional and full output power without de-rating



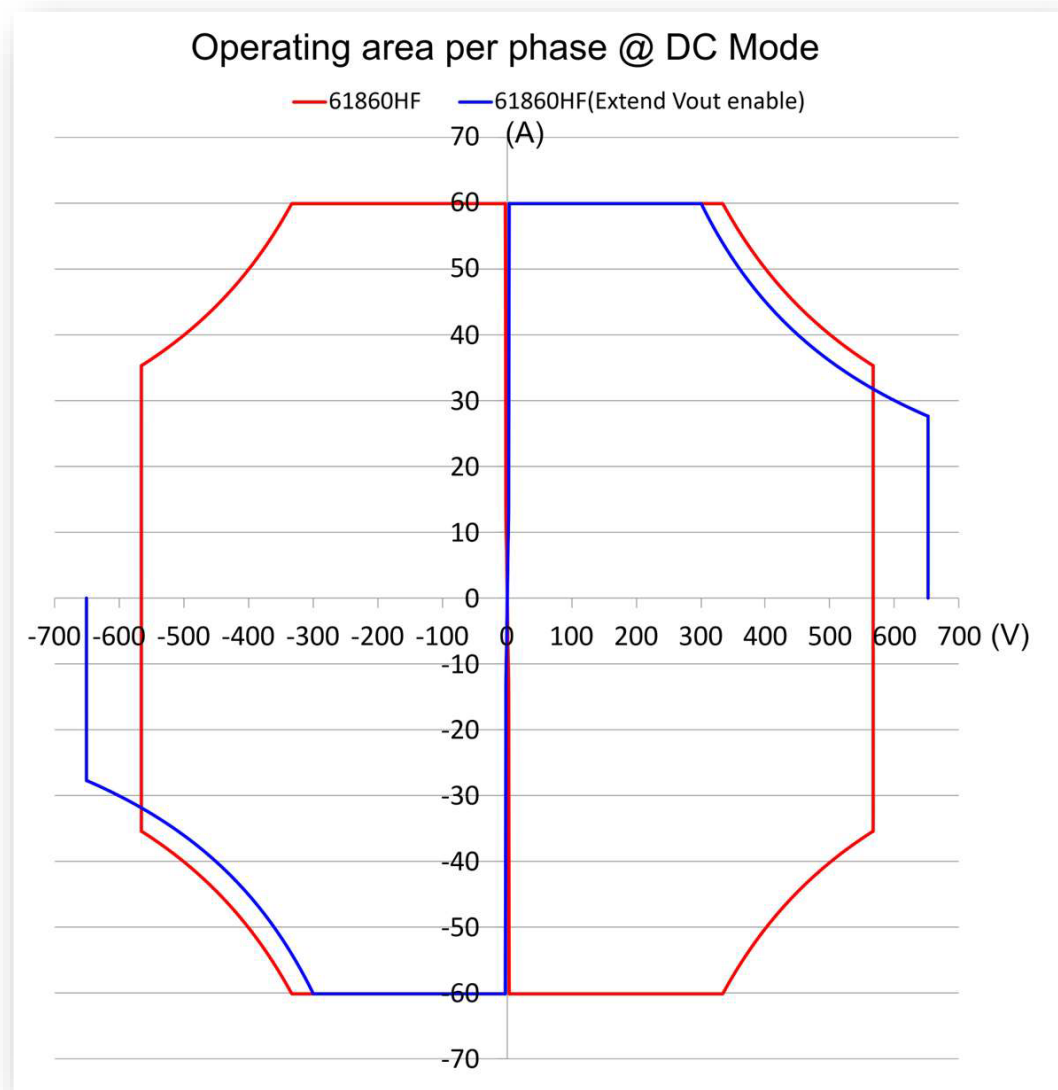
[Extend Vout] function is enable (blue line)

- The output voltage is 460VLN
- Regenerative function is disable and output power is derating to 54kVA for 61860HF (61830HF and 61845HF are not affected)

Product Specifications



Extend Vout function is disable



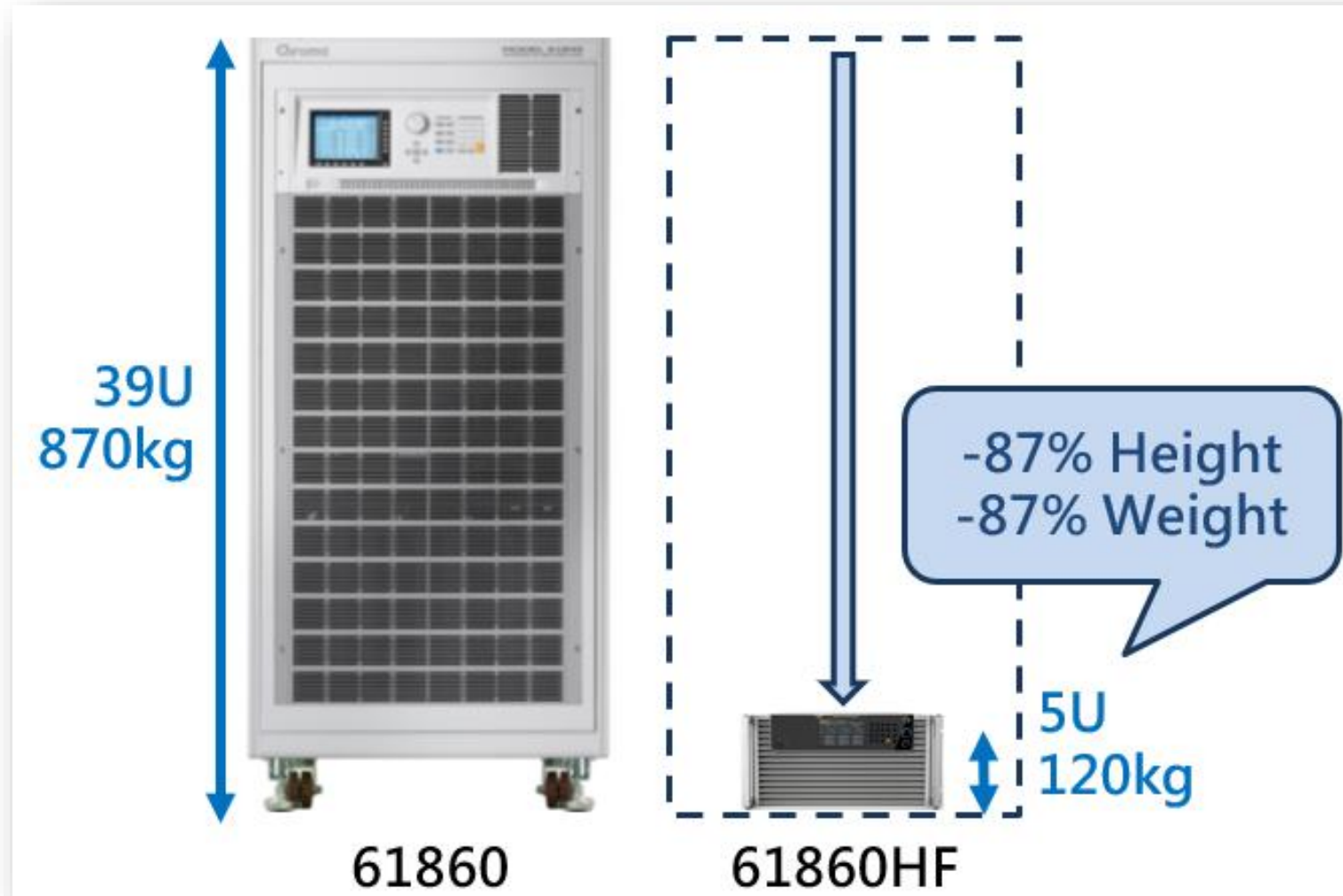
Extend Vout function is enable (blue line)

Key Features and Product Advantages

- High Power Density (60kVA at 5U)
- Support both Touch Panel and Physical Buttons
- Full 4 Quadrant Regenerative
- High Efficiency and Optimized Transient Performance
- 100% DC Power Output Capability
- Advance Power Line Disturbance (PLD) Function
- Master-Slave Parallel Function (up to 4 units -> $60\text{kVA} \times 4 = 240\text{kVA}$)
- Response Speed (System Bandwidth Adjustment)

Key Features and Product Advantages

High Power Density Design

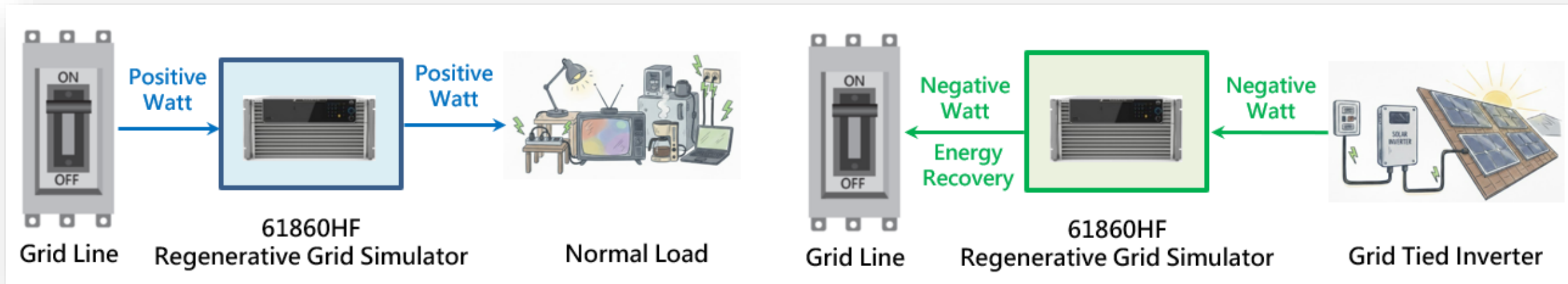


- SIC
- Advanced magnetic components
- High-performance thermal design

Significant in space saving and overall weight reduction

Key Features and Product Advantages

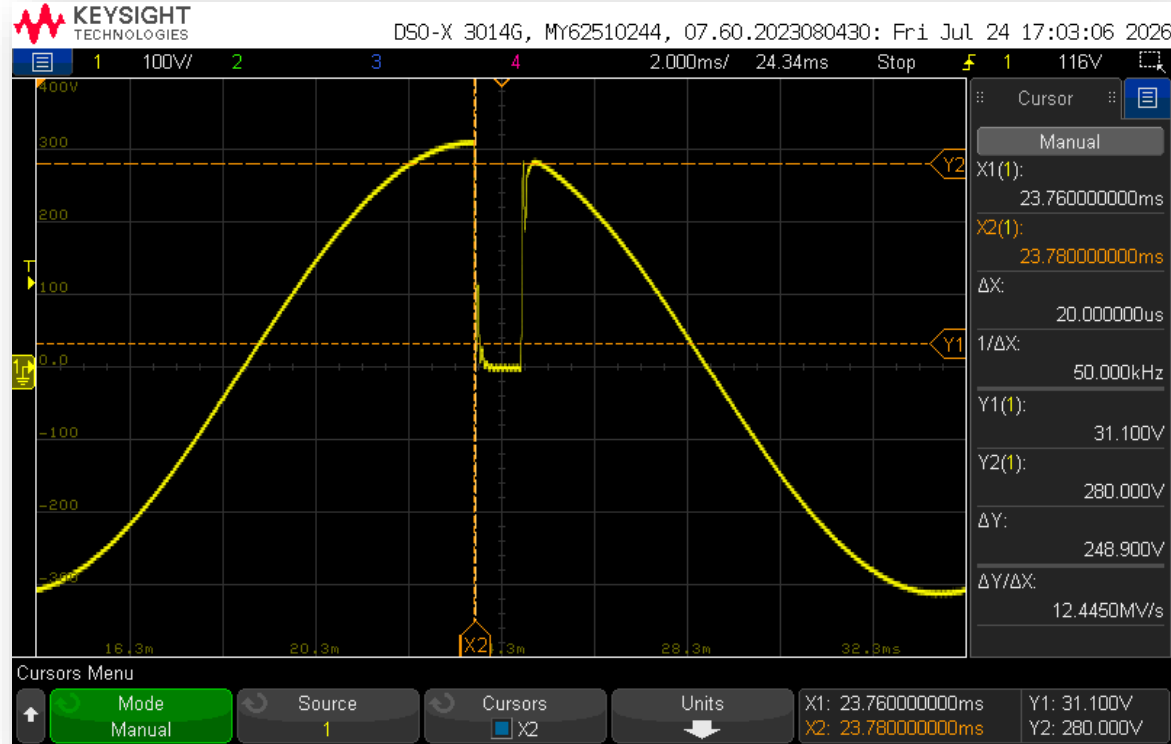
Full 4 Quadrant Regenerative



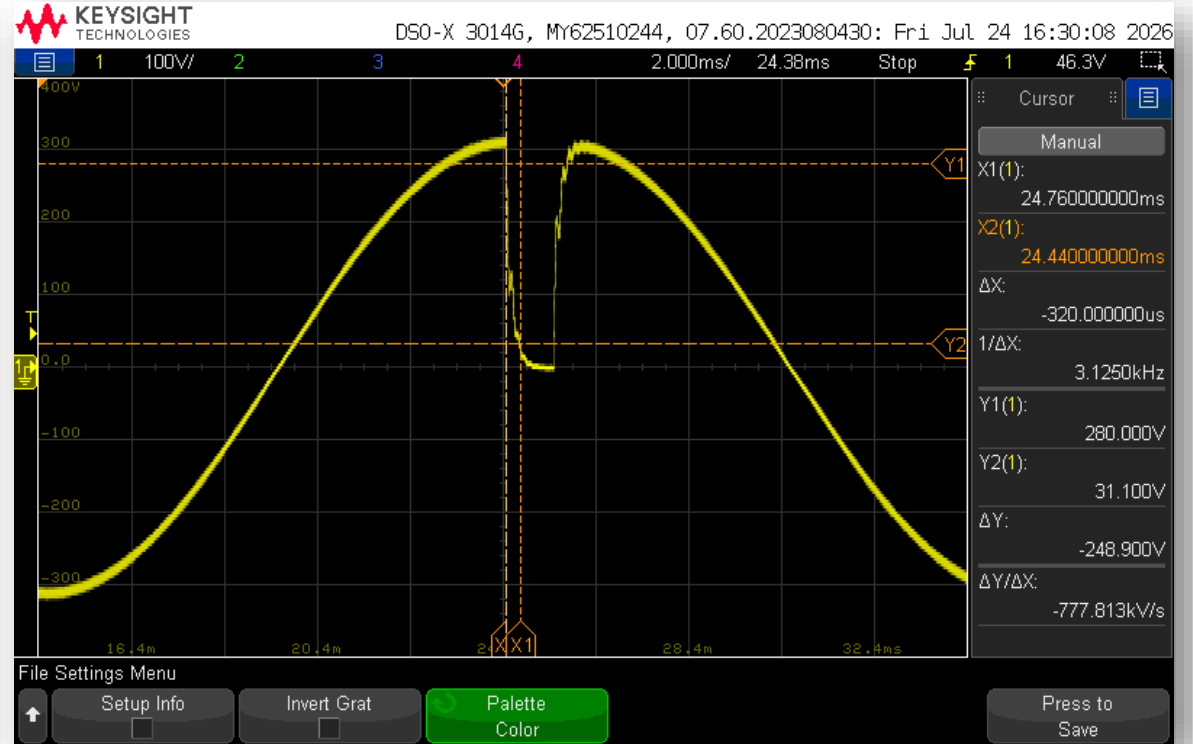
When the Device under Test (DUT) is a product that feeds energy back to the grid, such as a solar inverter or a bidirectional vehicle charger, Chroma 61860HF product can allow the reverse current and negative power generated by the DUT to be fed back to the AC grid with a **high conversion efficiency of over 90%**, rather than being consumed as heat.

Key Features and Product Advantages

Optimized Transient Performance



61860HF

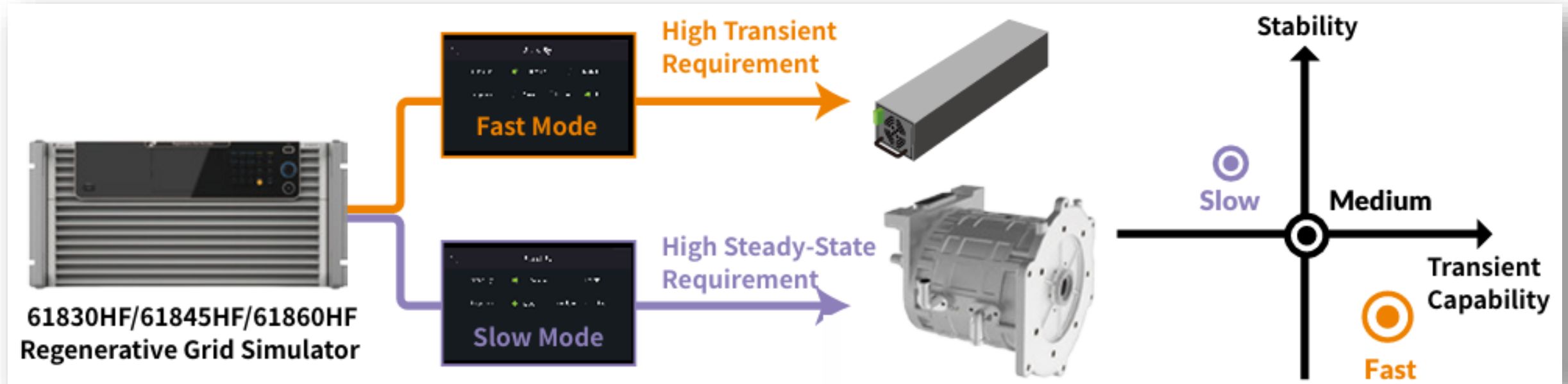


61815

Output voltage waveforms based on 1ms DIP (LIST mode) with 220V/90 degree test condition. The 61860HF demonstrates relatively sharp 1ms DIP waveform with rise/fall time less than 200us (high bandwidth performance).

Key Features and Product Advantages

Response Speed (System Bandwidth Adjustment)

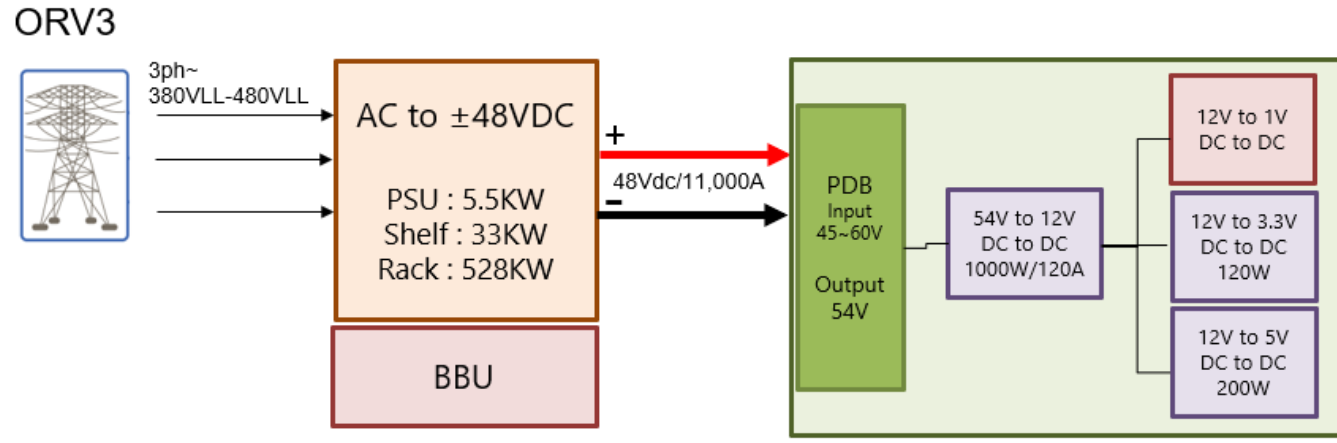


The Response Speed function implements digital control algorithms to adjust system bandwidth. Users can adjust the AC Source system bandwidth (output characteristics) to match the DUT test requirements by selecting Fast (high transient performance), Medium, and Slow (high stability) settings in order to obtain optimal output waveform. For example: use the Response Speed settings to obtain better VTHD% and ITHD% measurement for PV Inverter testing.

Product Applications

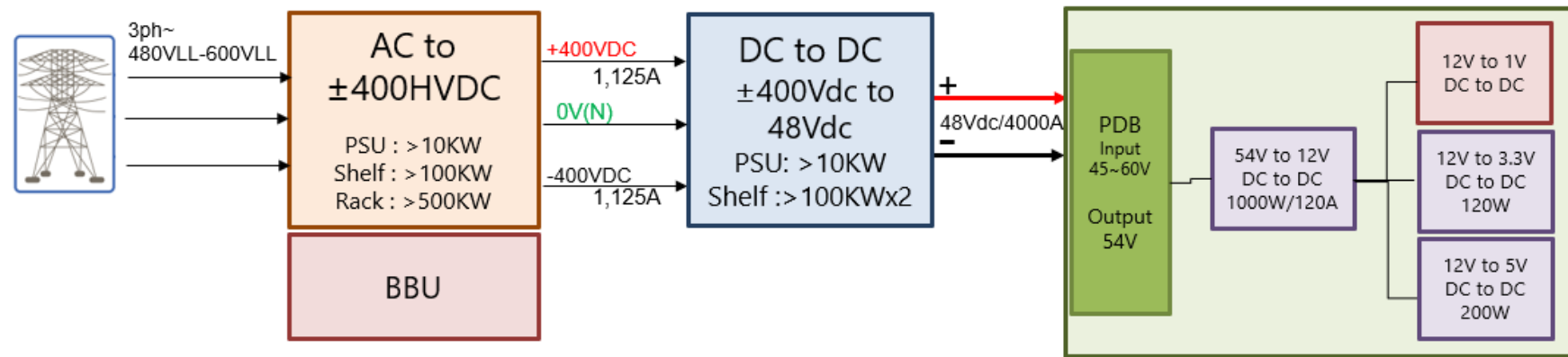
AI Server PSU/Power Shelf/Rack Power

ORV3 AI Server Rack Power Structure



61860HF is applicable for ORV3 5kW/12kW/30kW AI Server PSU testing and by incorporating 4 units in parallel with output power up to 240kVA adequate for meeting 180kW power shelf testing.

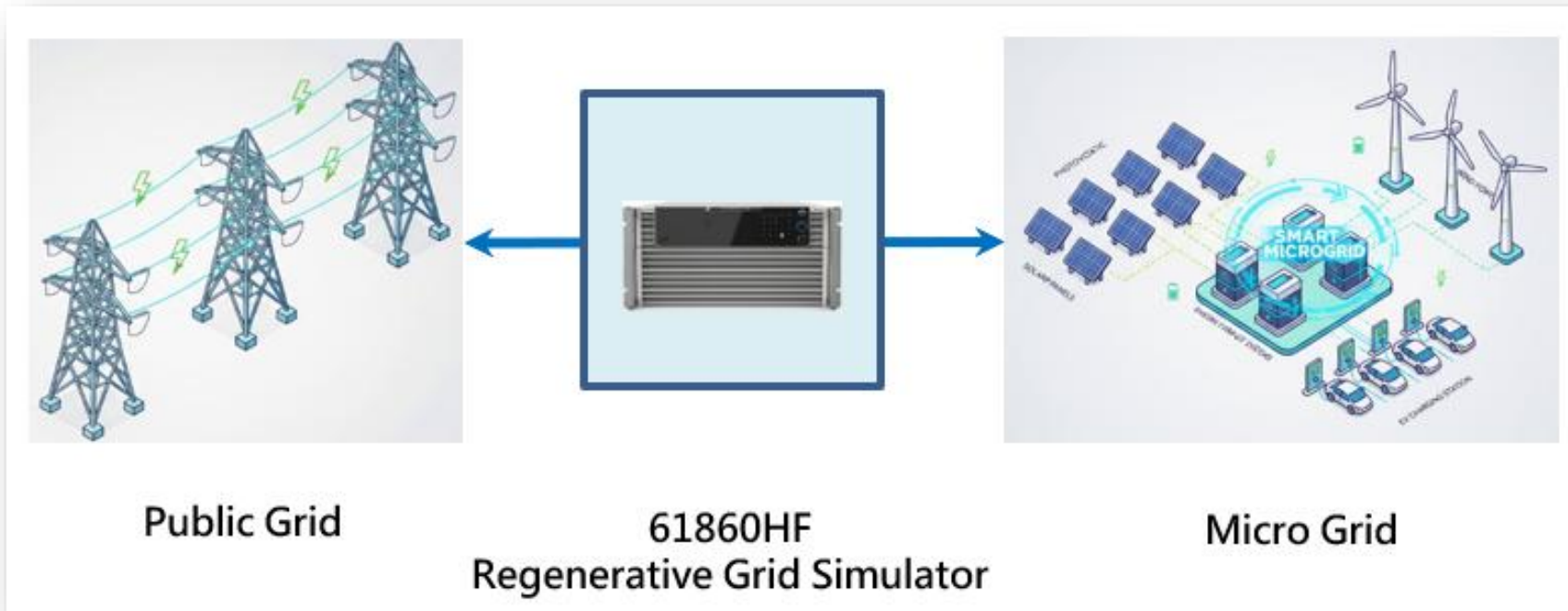
$\pm 400\text{V}$ HVDC AI Server Rack Power Structure



Product Applications

PV Inverter, Micro Grid

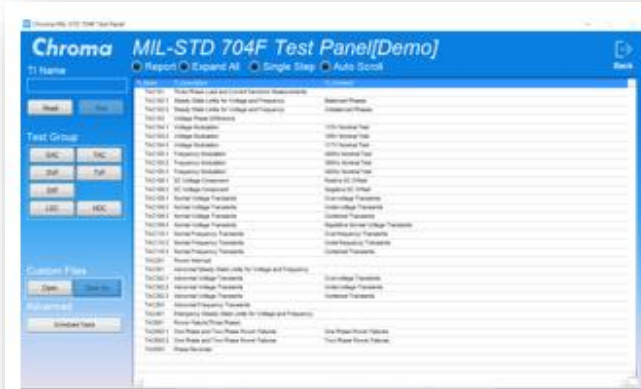
Chroma 61860HF is capable of providing test solution for PV inverter and micro grid products by simulating various voltage and frequency test conditions in accordance to grid tied regulatory standards such as UL 1741SA 、IEEE 1547 、EN 50549 、IEC 62116.



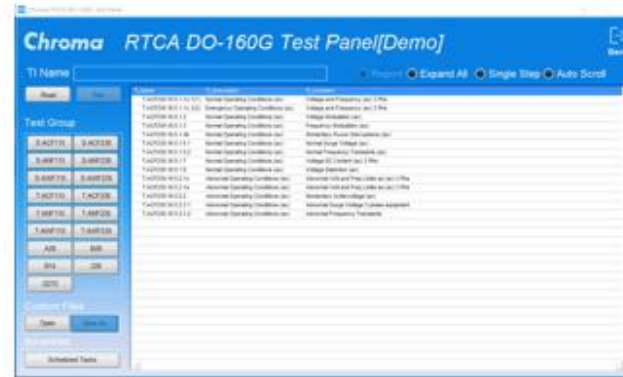
Voltage Abnormality Test
Frequency Abnormality Test
Anti-islanding Test
LVRT/HVRT Test
Immunity Test
Limit Test
Flicker Test

Product Applications

Avionics



Aerospace Test For MIL-STD-704F



Aerospace Test For RTCA DO-160G



Aerospace Test For ABD0100.1.8.1

- The voltage for AC system of aircraft power is 115V/230V with operating frequency as 400Hz、360Hz~650Hz、360Hz~800Hz.
- Avionics standards such as MIL-STD-704F, RTCA DO-160G, ABD0100.1.8.1, define the test conditions based on the aircraft power system state of operation, such as: Normal, Starting, Abnormal, Emergency, Transfer and Power Failure.
- The Chroma 61860HF product features an optional 1kHz* output frequency function and can be used with Aerospace Test SoftPanel for providing related test solution.

* Optional 1kHz output Function of 61860HF (2026/Q4)



62000D Series Bi-directional DC Power Supply Product Introduction

62000D Series- Bidirectional DC Power + Regenerative Load

Chroma

6kW
12kW
18kW



30kW
36kW
45kW



2 in 1

Bi-directional
DC Source and DC Load

High Transient Response
< 1.5ms (CV)

(@ -90% to +90% Load Change)

Up to 40 units parallel*
= 1.8MW max.

Parallel Capability

USB/ LAN/ GPIB*1/
CAN FD*1*2/ Aurora*1*2

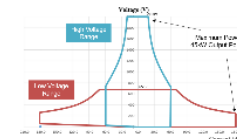
Interface *1 Optional, *2 62000D-HL model

Battery Sim. /Fuel Cell Sim. /
Vehicle Electrical Standards LV148/LV123
/ SAS(optional)

SoftPanel – Software Advanced Function

Dual Range of Output
650V/180A & 2000V/60A

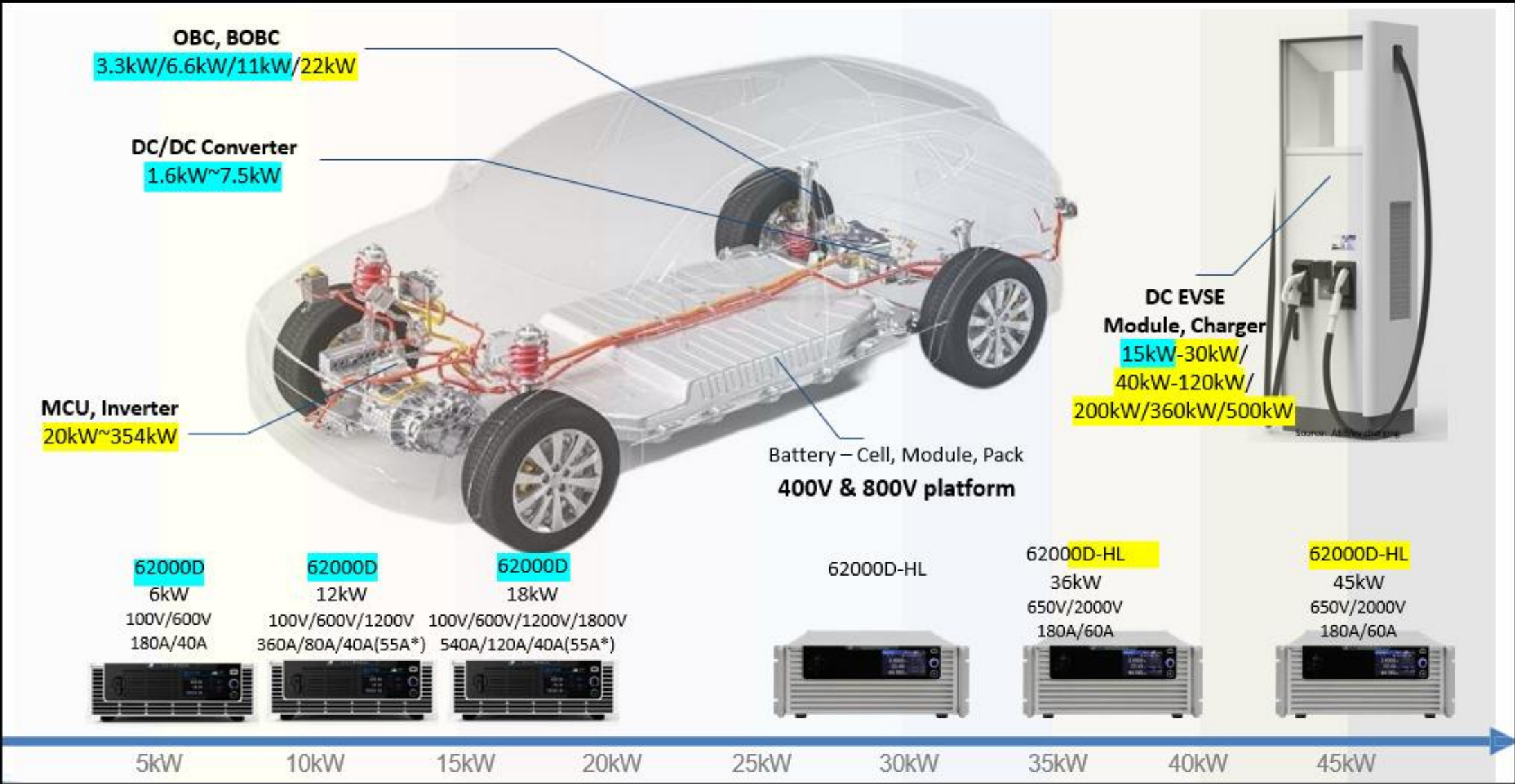
(62000D-HL Model) Output Rating



18kW / 3UH

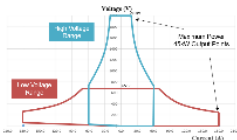
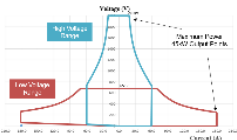
45kW / 4UH

High Power Density

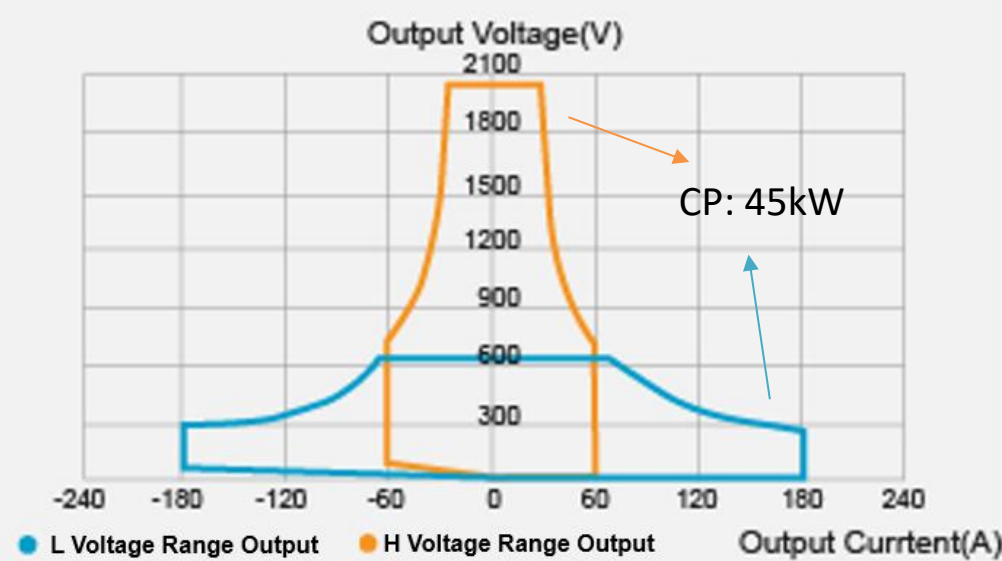
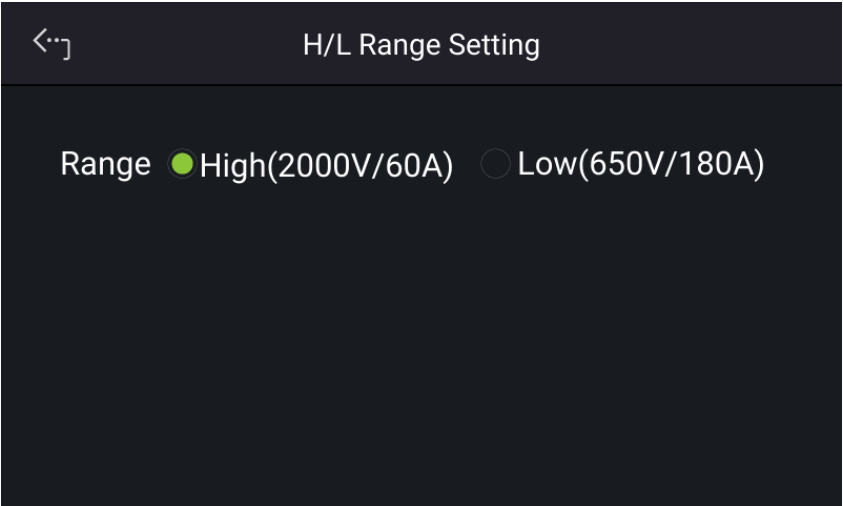
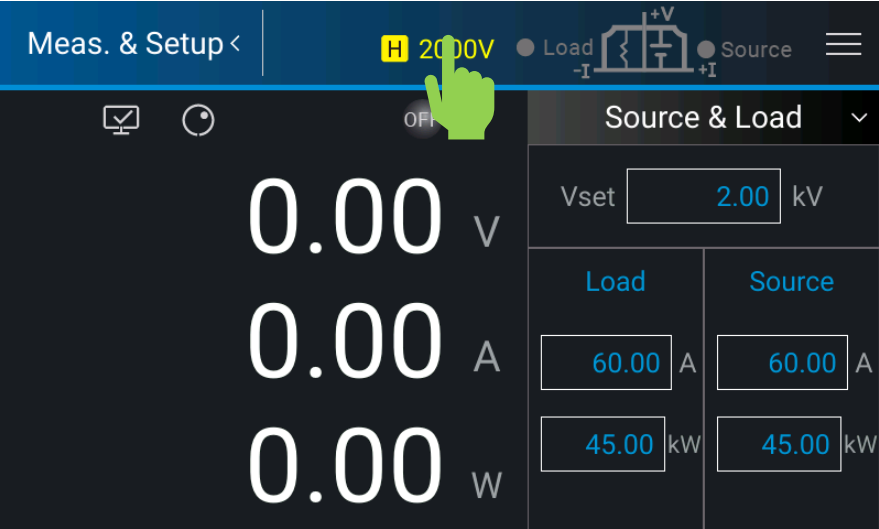


Main Specifications of The 62000D Series

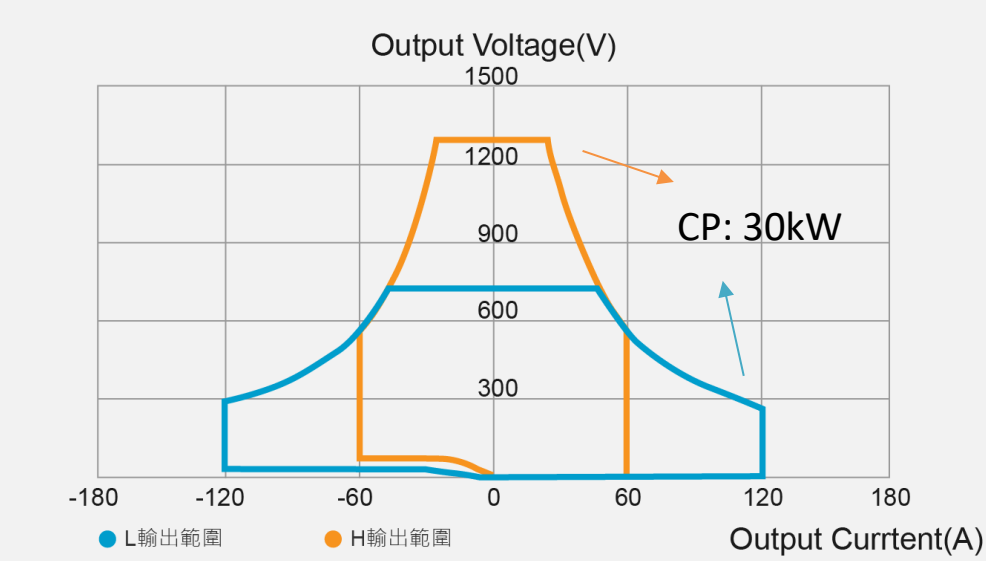


	62xxxD-100	62xxxD-600	62xxxD-1200/1800	62300D-1300HL	62xxxD-2000HL
	100V 180A/360A/540A 6kW/12kW/18kW	600V 40A/80A/120A 6kW/12kW/18kW	1200V/1800V 40A(55A*) 12kW/18kW	650V/1300V 2in1 120A/60A 30kW	650V/2000V 2in1 180A/60A 36kW/45kW
					
Voltage Meas. Accuracy	20V/100V 0.05%+0.05%F.S.	120V/600V 0.05%+0.05%F.S.	240V/1200V 360V/1800V 0.05%+0.05%F.S.	650V/1300V 0.02%+0.02%F.S.	650V/2000V 0.02%+0.02%F.S.
Current Meas. Accuracy	108A/540A @18kW 0.1%+0.1%F.S.	24A/120A @18kW 0.1%+0.1%F.S.	8A/40A/55A 0.1%+0.1%F.S.	120A/60A 0.04%+0.04%F.S.	180A/60A 0.04%+0.04%F.S.
Voltage Slew Rate (Max.)	10V/ms	60V/ms	180V/ms	130V/ms	200V/ms
Current Slew Rate (Max.)	30A/ms	60A/ms	20A/ms	60A/ms / 30A/ms	90A/ms / 30A/ms
Efficiency (Typical)	Source: >92% Sink: >90%	Source: >92% Sink: >93%	Source: >92% Sink: >93%	Source: >94.3% Sink: >94%	Source: >94.3% Sink: >94%
Range of Output	1 x Autoranging	1 x Autoranging	1 x Autoranging	 2 x Autoranging	 2 x Autoranging

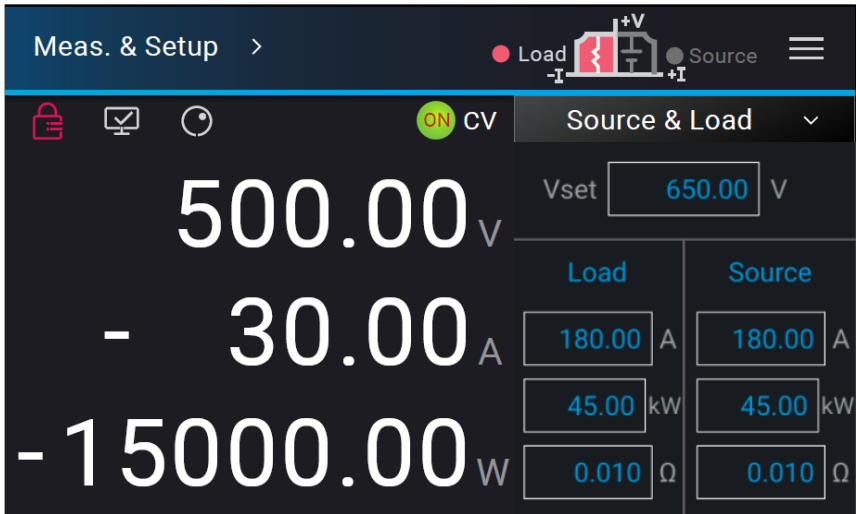
62000D-HL – Dual Ranges Switching in One Click



62450D-2000HL Operating range

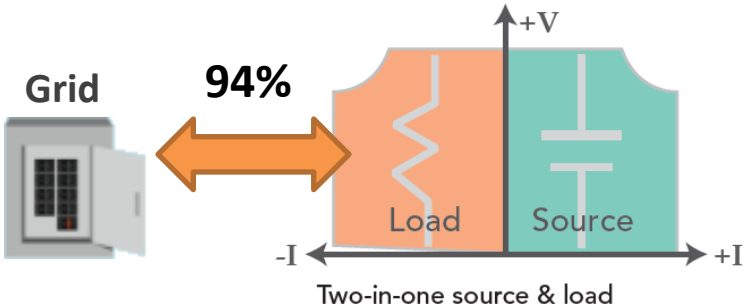


62300D-1300HL Operating range



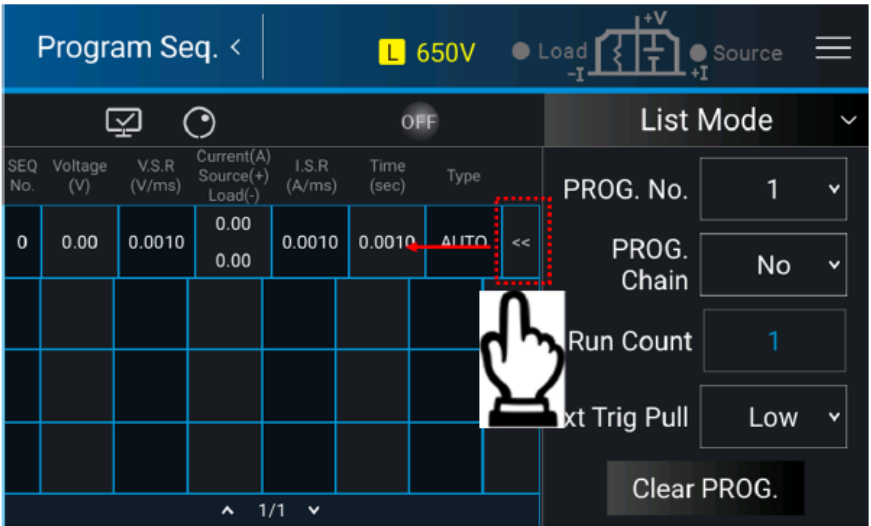
Basic Mode:

- 1. **Source & Load Mode** (Auto. two-quadrant range operation)
- 2. **Source Mode** (fixed)
- 3. **Load Mode** (fixed)



Programming Mode:

- 1. **List Mode** (user-defined waveform)
- 2. **Step Mode** (quickly set voltage rise or fall)

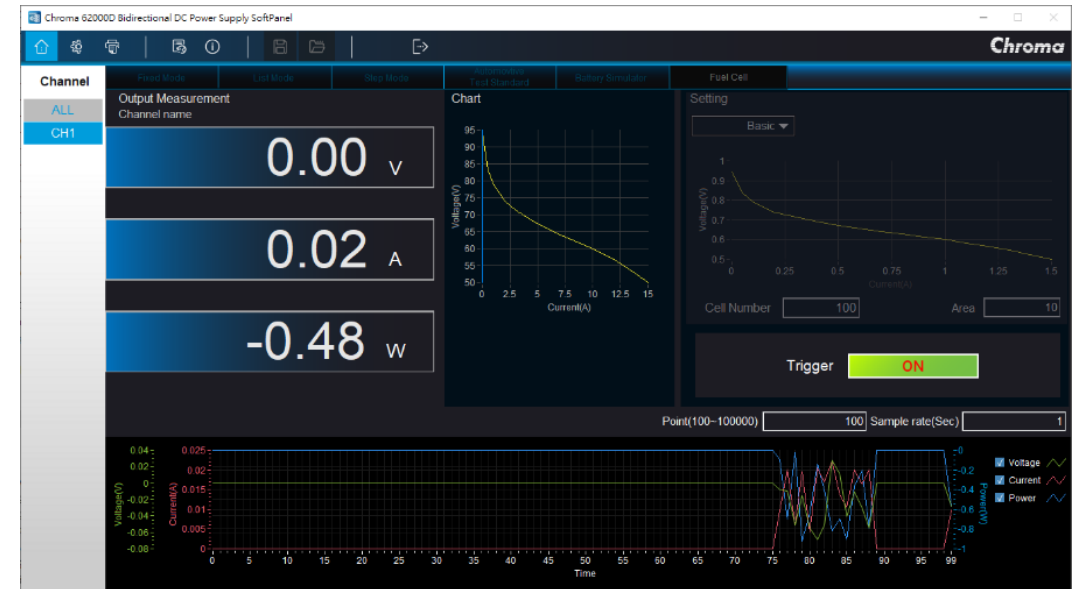


62000D provide **Battery** and **Fuel cell simulation** function that can simulate operation at different capacity (SOC) or import battery V-I curves characteristics and fuel cell V-I curves. It can evaluate the product under different battery and fuel cell capacities for testing various products such as BOBC, battery inverter, motor drivers and fuel cell booster converter.

SoftPanel - Battery Simulator



SoftPanel – Fuel cell Simulator



The **LV123** standard specifies the electrical characteristics and safety standards for high-voltage components, while the **LV148** covers tests for electric and electronic components in 48V electrical system motor vehicles.

Chroma 62000D has a high-speed CV dynamic response slope that can be controlled up to 200V/ms, applicable to the electrical characteristics pre-test of partial vehicle standards.



62450D-2000HL high power parallel capability



62450D-2000HL Bidirectional DC Power + Regenerative Load

Main Features:

- Output: (H)2000V/60A/45kW & (L)650V/180A/45kW 2in1
- Dual ranges of output in one-click switching
- Parallel to high power density 360kW @41U Rack

62450D-2000HL
x8 units / rack
360kW / 41UH

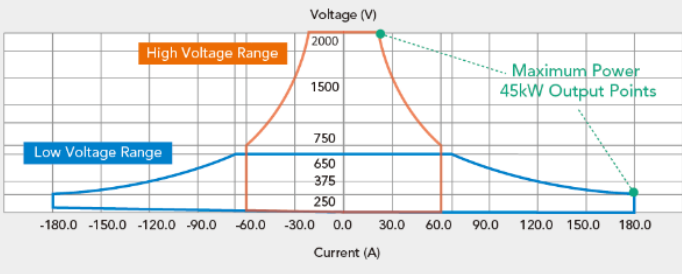


<41U
<850kg

8x Wider Output Range
with Two Selectable Ranges



62450D-2000HL



40units / 5 Racks

➤ 62000D Series

- Bi-directional DC source & Regen. Load

360kW per 41U rack
650V/2000V H/L range 2 in 1
Power: 45kW-1.8MW



360kW

720kW

1MW

1.8MW

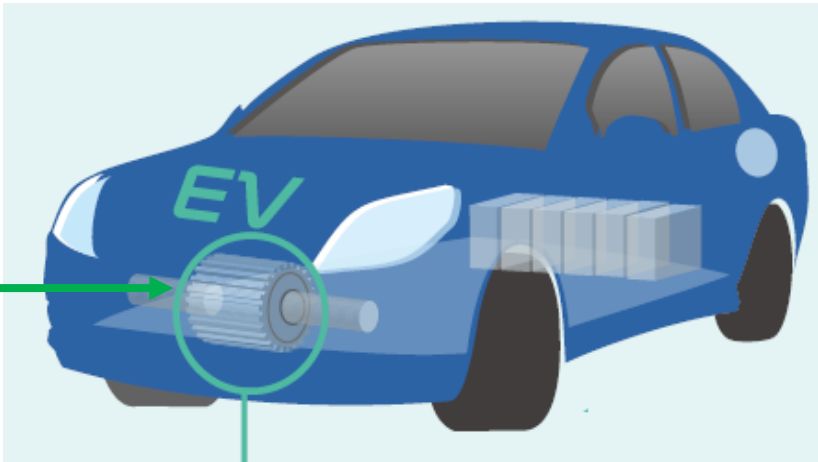
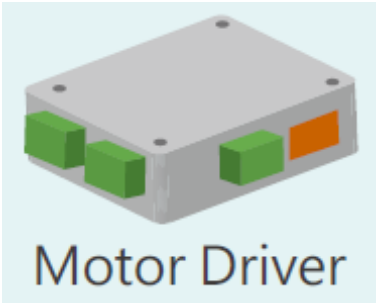


400V & 800V platform

HV Traction Battery



DC-AC



<Solution>

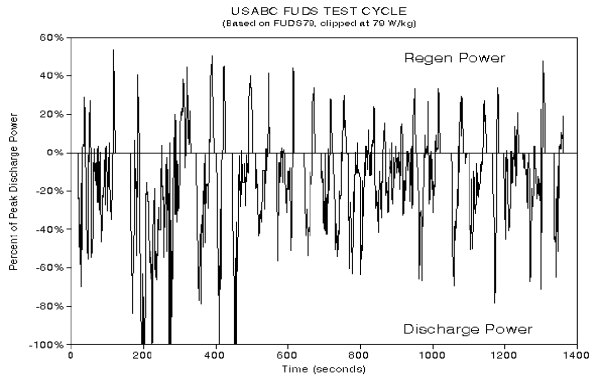
62360D/62450D-2000HL Bi-directional DC Source with Regenerative DC load

<Benefit>

- ✓ Energy regenerative
- ✓ Regenerate Back-EMF to the grid
- ✓ Easily Master-Slave to Parallel
- ✓ Compact size
- ✓ High Transient response

<Conventional Solution>

DC source + Protection diode + Resistor



Motor Loading Profile





Thank You