PROGRAMMABLE DC ELECTRONIC LOAD MODEL 63200A SERIES

The 63200A series high-power DC electronic load is designed for testing server power supplies, AC/DC power supplies, automotive batteries, DC charging stations, and various other power electronics applications. With high power capacity, parallel operation, and synchronized dynamic loading, this series is particularly suited for testing high-power devices such as automotive and fuel cell batteries.

The 63200A series offers voltage ranges of 60V, 150V, 600V, and 1,200V, with power ratings from 2kW to 24kW. A single unit can handle currents up to 2,000A, and through parallel operation, the total power capacity can reach up to 240kW, ideal for testing automotive charging stations and battery discharge applications.

Every model in the series includes User-Defined Waveform (UDW) functionality and external signal control, allowing for realistic current waveform simulations. The master/slave control capability enables multiple units with the same voltage specifications to operate in parallel while maintaining synchronized dynamic loading. The dynamic auto-frequency sweep function allows for load simulations at different frequencies to meet power testing requirements. Additionally, the series provides 255 memory slots for storing user settings, which can be recalled at any time, resulting in significantly reduced testing time in automated applications.

In terms of measurement, the 63200A series also provides precise voltage and current measurements in real time, with three ranges available for each model. Short circuit testing is one of the essential power testing items, and the 63200A series provides short circuit simulation to effectively solve the application demands for power and automated testing.

With the OLED display and rotary knob, the 63200A series loads offer versatile front panel operation. Users are able to control the 63200A family remotely via standard USB or optional Ethernet/LXI, GPIB and CAN BUS interfaces.

The embedded PWM fan speed control reduces noise caused by fans. The 63200A series includes over-current, over-power, and over-temperature protections as well as alarm mechanisms for over-voltage and reverse polarity. This robust protection ensures a highly reliable product, making the 63200A a trustworthy solution for engineering testing and automated test system integration.

USB Ethernet LXI GPIB CAN BUS CE RoHS2 Compliant

MODEL 63200A SERIES

KEY FEATURES

- Rated power: 2kW, 3kW, 4kW, 5kW, 6kW, 8kW, 10kW, 12kW, 15kW, 18kW, 20kW, 24kW, max.. 240kW (parallel)
- Voltage ranges: 60V, 150V, 600V, 1,200V
- Current range: 2,000A max. per unit
- 0.6V@1000A (typical) low voltage operating characteristics
- CC, CR, CV & CP operation modes
- CR+CC, CR+CV, CC+CV compound modes
- Up to 10 units master/slave parallel control
- Up to 60 units synchronized control, providing a total load power of 1.44 MW *
- Dynamic synchronous control in static and dynamic loads
- User defined waveform (UDW)
- CZ mode for capacitive load power-on simulation
- External loading current simulation
- Auto frequency sweep up to 50kHz
- Real time power supply load transient response simulation & Vpk+/- measurement
- 255 user-programmable sequences directly editable via front panel
- Ultra high precision voltage & current measurement
- Precision high speed digitizing measurement/data capture
- Voltage, current & Pmax. measurement for OCP/OLP testing
- Timing & discharging measurement for batteries
- Short circuit simulation
- Smart fan control
- Full protection: OC (adjustable), OT, OP (adjustable) protection & OV warning
- Standard USB interface
- Optional Ethernet/LXI, GPIB and CAN BUS interfaces

* Please contact Chroma for details.

Chroma
Advancing Excellence

APPLICATIONS

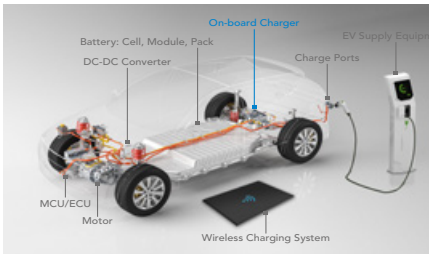

Data Center


Server Power


High Voltage UPS


Telecom Power


Solar Panel



On Board Charger


Battery Pack


Energy Storage System

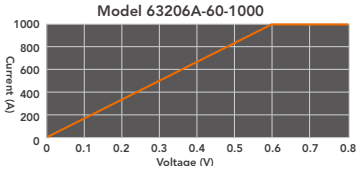
EV Charger Station

LOW VOLTAGE OPERATION

The 63206A-60-1000 is designed with low-voltage loading capabilities, supporting 0.6V@1,000A and even allowing current draw within the 0V to 0.6V range (refer to the V-I derating curve for operating characteristics). This low-voltage capability makes it ideal for testing CPU VCORE power supplies and GPU power supplies, which typically operate within a 0.6V to 1.5V voltage range and 400A to 800A current range. This series is also suitable for fuel cells and other low-voltage, high-current applications. For even lower voltage and higher current requirements, the 63202A-20-1000 and 63202A-20-2000 models are available, supporting up to 2,000A at a minimum operating voltage of 0.25V. For more details, refer to the Ultra-Low Voltage DC Electronic Load datasheet and our official website.

*Note: Due to the specification range of the RDS (on) of internal power components, there are variations in the actual loadable current values for each load when the operating voltage is below the minimum operating voltage.
Note: The 63206A-60-1000 can be paired with the low-inductance load cable B632008 (optional) to connect to the UUT for low-voltage testing.

Low Voltage Characteristics (Typical)
Model 63206A-60-1000



Note: All specifications for static state are measured at the load input terminals. (Ambient temperature of 25 ˚C)
Note: The characteristics is for static state.

ULTRA HIGH POWER DENSITY & USER-DEFINED HOT KEY DESIGN

Chroma's 63200A series of high-power programmable electronic loads is equipped with a 200MHz digital signal processor (DSP) delivering excellent speed and control performance. With an ultra-high power density of 6kW@4U, it saves valuable space, while its high-precision voltage (0.015% + 0.015% F.S.) and current (0.04% + 0.04% F.S.) measurements ensure accurate results.

All models in the series support standalone manual operation or remote control. For higher-power applications, multiple units can be connected in master/slave mode to enable parallel operation, with synchronized loading to simulate real-world load conditions.

The 63200A series' exceptional high-power-density design subverts the idea that high-power electronic loads are bulky and inconvenient to move. This makes the instruments particularly beneficial for laboratories, while also solving space constraints when updating automated test system setups. Additionally, the 63200A Series offers four user-defined shortcut keys, allowing users to quickly switch to the required operating mode.

INTUITIVE GRAPHICAL INTERFACE

The intuitive graphical interface of the 63200A series simplifies operation. Both basic and advanced functions are visually displayed with helpful icons, allowing users to select desired functions via the rotary knob or direction keys. Function icons include abbreviations while full descriptions are displayed at the top for extra clarity, making the unit easy to operate even without a user manual.

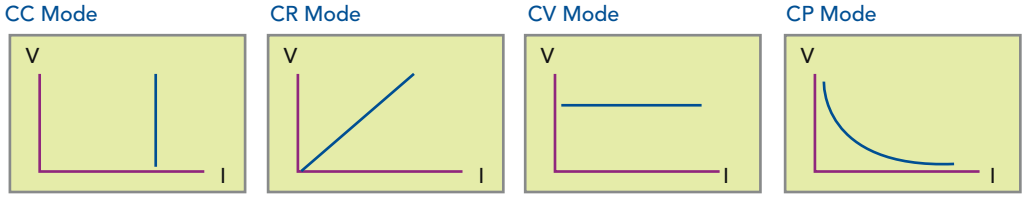
FLIPPABLE FRONT PANEL

The 63200A Series models with 7U, 10U, and 13U heights feature a tiltable front panel with a maximum tilt angle of 70˚. This ergonomic design allows easy access and increased visibility for a more convenient experience.

63224A-150-2000

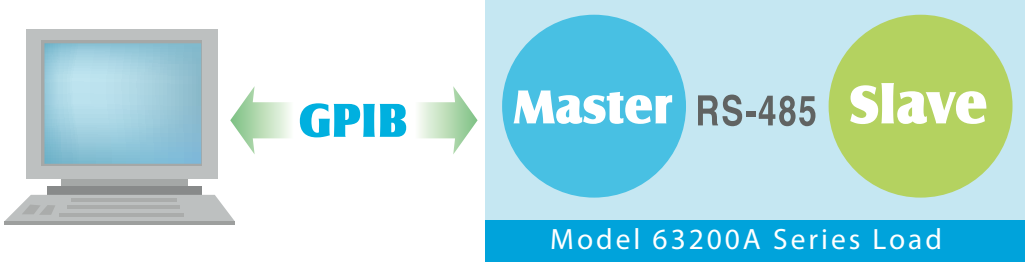
BASIC LOAD APPLICATIONS

The 63200A Series offers Constant Voltage (CV), Constant Current (CC), Constant Resistance (CR), and Constant Power (CP) modes to meet a wide range of testing requirements. For instance, when testing voltage sources, CC and CR modes help verify whether the UUT can maintain stable output voltage under different load conditions. For battery chargers or charging stations, CV mode can be used to adjust the output voltage of the UUT, ensuring that the charging current remains accurate at the set output voltage. When the UUT is a battery, the electronic load can simulate the behavior of electronic devices drawing power, enabling analysis of battery discharge applications and power consumption. CP mode is a suitable option for this kind of simulation.



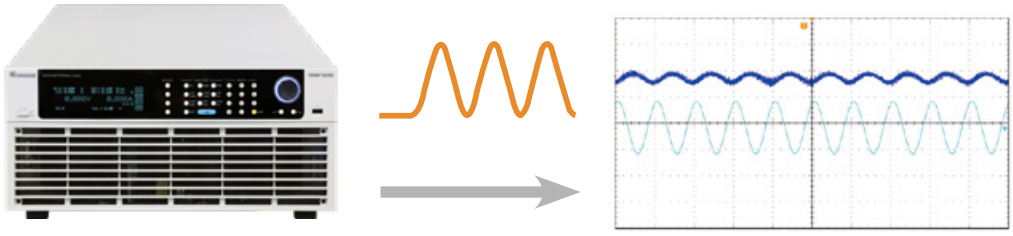
MASTER/SLAVE PARALLEL CONTROL

The 63200A Series features an intelligent master/slave control mode that allows multiple units with the same voltage rating to be paralleled for higher current and power requirements. When operating in master/slave mode, all connected units function as a single load. Users only need to program the load current on the master unit, which will then automatically calculate and distribute the current among the slave units. This greatly simplifies operation and reduces setup complexity. All models in the series can be integrated into a standard 19" rack to save space. The 600V and 1200V slave units, which do not have control panels, must be used in combination with a master unit that has a control panel. Additionally, the 63200A Series comes with a USB interface (standard) and optional GPIB and Ethernet/LXI interfaces, allowing for remote control and automated test applications.



SINE WAVE DYNAMIC LOAD

The 63200A Series has a sine wave load current capability, allowing users to set the DC bias current (I_DC), sine wave amplitude (I_AC), and frequency. The lowest point of this sine wave load cannot be less than zero amperes. This sine wave loading feature is ideal for testing the AC impedance of fuel cells, as well as DC-DC converters and server power supplies.

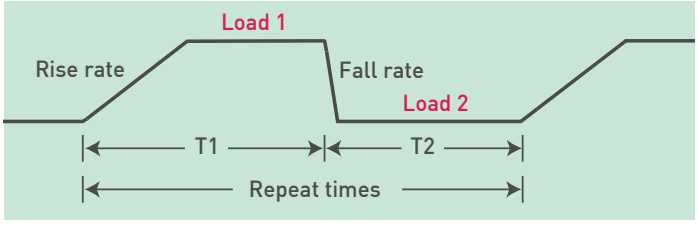


DYNAMIC LOAD

ADVA → 1. Dynamic + Repeat Times
2. Frequency Sweep

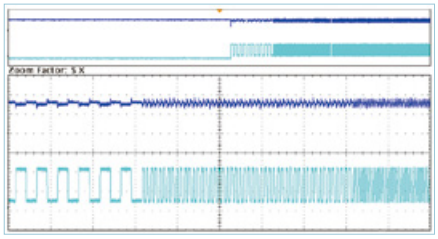
Modern electronic devices operate at very high speeds and demand rapid transient response characteristics. To address these applications, the 63200A series offers high speed, programmable dynamic loading (CCD: Dynamic Current Loading & CRD: Dynamic Resistance Loading) and sweep simulation for testing. The figure below shows the programmable parameters: current high/low level, T1/T2, rise rate/fall rate, and repetition count. The 63200A Series minimizes current waveform distortion during fluctuating load currents through an internal monitoring system and circuitry. The minimum current rise response time of the 150V model is 10 μs, with a dynamic change up to 50kHz.

In addition to basic parameters, users can also set a repetition count ranging from 1 to 65,535 cycles. This is especially useful for testing DC-DC converters and battery surge current tolerance.



DYNAMIC FREQUENCY SWEEP CONTROL

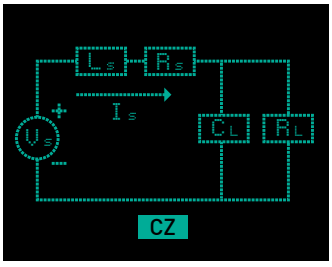
The 63200A also offers a unique dynamic frequency sweep (as shown on the right) with variable frequencies up to 50kHz. This capability is ideal for determining worst case voltage peaks. Measurement of the Vpeak (+/-) can be achieved using this function with a sampling rate of 500kHz. The dynamic loading mode can simulate different loading conditions for most test requirements. Dedicated remote load sensors and control circuits guarantee minimal waveform distortion during dynamic loading.

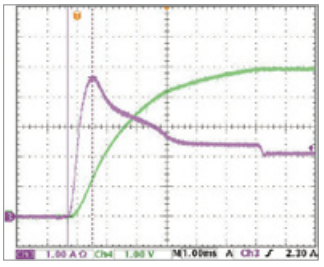


CONSTANT IMPEDANCE MODE (CZ MODE)

Server motherboards contain numerous capacitors, which can cause a high inrush current when a power supply is first turned on. This can potentially trigger over-current protection (OCP) and prevent the system from starting. To address this, power supplies require capacitive load startup testing, and the 63200A Series includes a constant impedance (CZ) load mode specifically for this purpose.

CZ mode simulates real-world inductive, resistive, and capacitive loads to accurately represent actual circuit behavior. The diagram on the right shows the voltage and current waveforms of a simulated switching power supply in a capacitive load startup test.



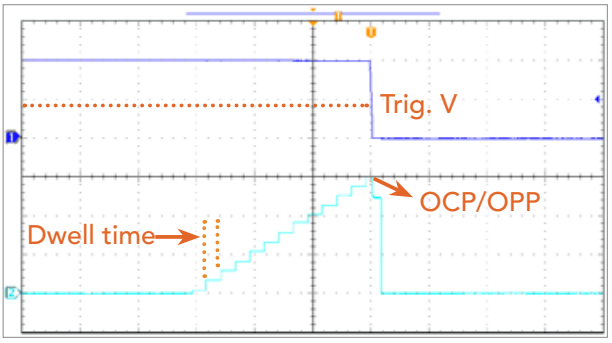


ULTRA HIGH PRECISION MEASUREMENT

The 63200A series offers industry-leading measurement accuracy with three load ranges. For example, the 63206A-150-600 model offers voltage ranges of 16V, 80V, and 150V, accommodating testing needs for server power supplies and telecom power systems (12V, 48V, 54V). There are three current ranges: 60A, 300A, and 600A, meeting the needs of different application scenarios and minimizing range-related errors. Equipped with a high-precision A/D converter, the 63200A Series achieves exceptional measurement accuracy, with voltage accuracy reaching 0.015% + 0.015% F.S., current accuracy at 0.04% + 0.04% F.S., and power accuracy at 0.1% + 0.1% F.S. This level of precision is essential for testing the power efficiency of the UUT.

OVER-CURRENT & OVER-POWER TESTING

When designing a power supply, over-current and over-power protection mechanisms must be considered to ensure user safety and minimize failure rates. The 63200A Series enables users to set step current or step power conditions to perform over-current and over-power protection tests. During testing, the electronic load automatically determines whether the test result is a pass or fail, displaying the outcome on the screen. Additionally, the system captures and displays the maximum power value (Pmax.) in real time. This eliminates the need for an oscilloscope, allowing engineers to quickly verify whether the power supply's over-current and over-power protection mechanisms are functioning correctly while significantly reducing testing time.



OCP Test

USER DEFINED WAVEFORMS

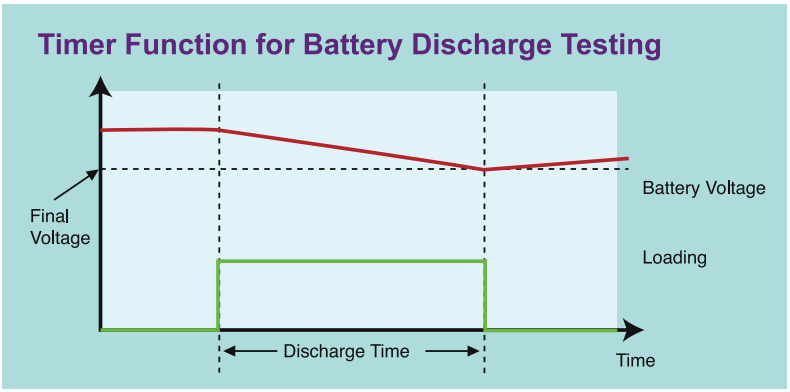
In addition to standard CC, CV, CP, and CR modes, the 63200A Series supports arbitrary waveform loading. Traditionally, arbitrary waveform testing requires a pre-stored waveform file to be transmitted from a PC via a DAQ card, or it involves an arbitrary waveform generator sending waveforms to the load.

The 63200A series provides a different option that is more convenient while also enabling direct simulation of real-world load currents: user-defined waveforms (UDW). Users can import actual waveform data captured via an oscilloscope or manually edit their own waveforms through Chroma's SoftPanel. These waveforms can then be easily stored in the 63200A Series' internal flash memory, eliminating the need for additional DAQ cards or waveform generators, which reduces costs and simplifies testing. The system provides 10 waveform storage slots, each capable of holding up to 1.5 million waveform points, ensuring ample capacity for various test scenarios.

While sinking the actual load current, the 63200A Series also captures and displays the maximum peak voltage values, both positive and negative. This allows engineers to analyze voltage variations without using an oscilloscope, saving significant time while improving efficiency.

BATTERY DISCHARGE TESTING

The 63200A Series offers three discharge modes for battery testing: CC, CR, and CP. Users can set a cutoff voltage and time (ranging from 1 second to 100,000 seconds) to ensure the electronic load stops discharging at the correct point, preventing battery damage due to over-discharge. Additionally, the system can measure the discharged energy in watt-hours (Wh) and ampere-hours (Ah), as well as the total discharge time. For example, when the Load ON function is activated, the built-in timer starts counting. It continues until the battery voltage drops to the preset cutoff voltage or the Load OFF function is activated. This battery discharge testing feature is also suitable for discharge time testing for supercapacitors and similar applications.

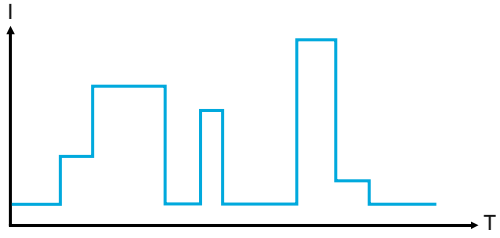


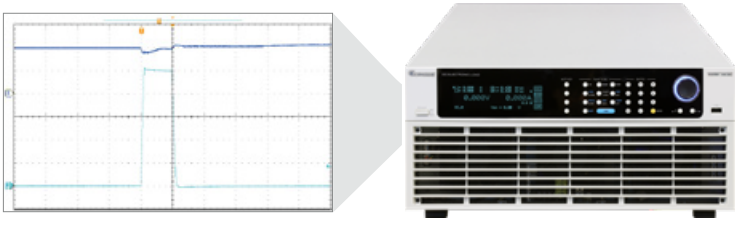
Battery Discharge Testing

PROGRAMMABLE LOAD SEQUENCING

The 63200A Series includes 255 programmable load sequences, allowing users to simulate various real-world load conditions. Common applications include:

1. Battery discharge simulations for devices such as laptops, electric vehicles, electric motorcycles. These simulations can replicate dynamic load current waveforms with two or more current levels or one-shot load events.
2. Mixed-load modulation for server and telecom power supplies.

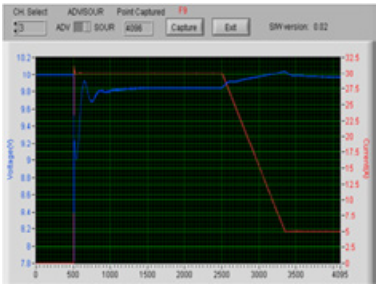


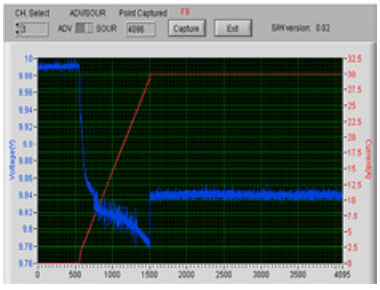


DIGITIZING FUNCTION

Users can take advantage of the 63200A's digital capture function to record transient voltage and current waveforms, making operation more convenient and saving valuable testing time.

Sampling time: 2μs-40ms/Resolution: 2μs (setting the sampling time interval)
Sampling points: 1-15,000 (setting total sampling points)

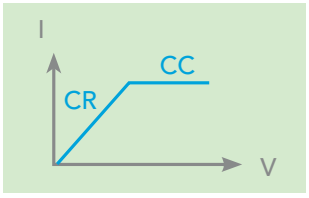




COMPOSITE OPERATING MODES

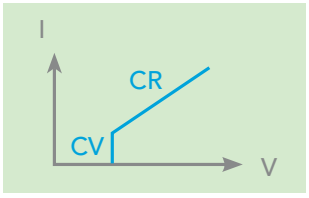
The 63200A Series features composite operating modes including CR+CC, CV+CR, and CV+CC. The CR+CC mode is ideal for power supply startup testing, while CV+CR mode can replace traditional Von point settings. CV+CC mode is particularly useful for battery discharge testing.

I/V Curve



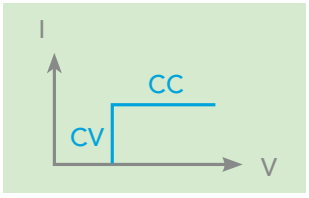
CR+CC Mode

I/V Curve



CV+CR Mode

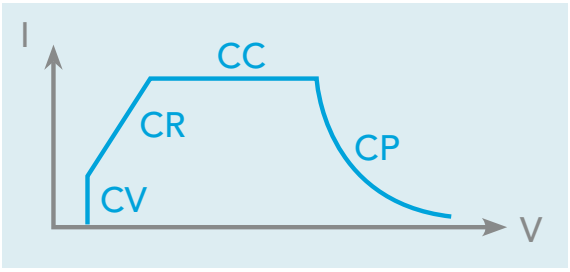
I/V Curve

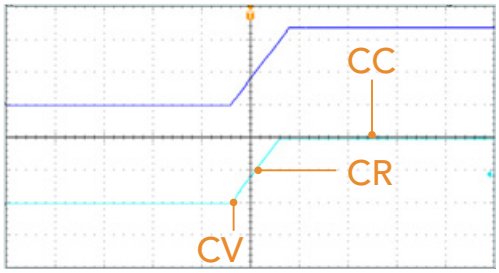


CV+CC Mode

AUTO MODE

Auto mode allows seamless switching between CV, CR, CC, and CP modes based on predefined limits. This is especially useful for testing lithium-ion battery chargers, enabling users to obtain a complete V-I charging curve. Additionally, when the protection circuitry of the UUT is compromised, the automatic switching mechanism helps prevent further damage by dynamically adjusting to the situation.





SOFTPANEL

In addition to the front panel, the 63200A Series can also be controlled through Chroma's graphical software interface SoftPanel. This user-friendly software integrates all functions, making it easy to learn and operate. The 63200A Series can be controlled via GPIB, USB, and Ethernet, providing users with flexible options for remote control and system integration.

Main

Over Current Protection

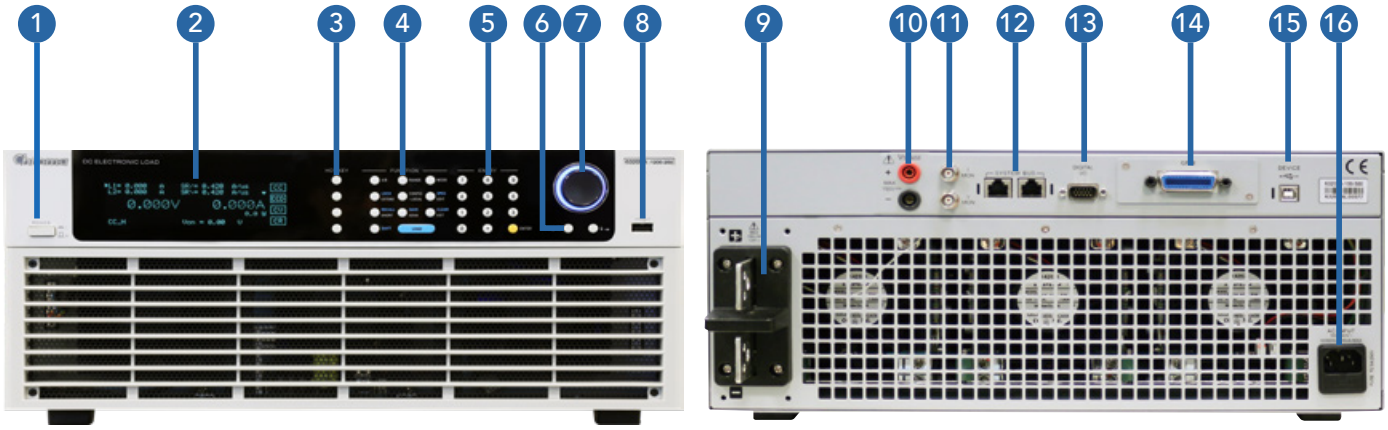
User Defined Waveform

Battery Discharge

Sine Wave

Program

PANEL DESCRIPTION



1. Power Switch: Electronic load AC power switch
2. OLED: Displays settings and data
3. Shortcut Keys: Quick load mode switching
4. Function Keys: A/B keys, RANGE, MODE, EXTEND, LOCK, CONFIG/ LOCAL, EDIT, SPEC, SHORT, RECALL, ADVA, SAVE, CLEAR
5. ENTRY Keys: Numerical keys and ENTER key
6. Arrow Keys: Change between pages and select menu options
7. Pushable Rotary Knob: Press to enter parameter editing mode. Press again to confirm input
8. USB HOST: Import and export user-defined waveforms and program data settings, export Error logs
9. Load Positive/Negative Terminal
10. Remote Sense Connections
11. Analog Outputs: Proportional voltage and current waveforms
12. System BUS: For master/slave system data transmission
13. System I/O: For system input/output signal control
14. GPIB, Ethernet Card & CAN BUS slot
15. USB Port
16. AC Input Connector

SPECIFICATIONS-1 (60V)

60V Models	63206A-60-1000		
Voltage *2	0-60V		
Current	0-100A	0-500A	0-1,000A
Power *3	0-6,000W		
Static Mode			
Typical Min. Operating Voltage (DC) *12	0.6V@1,000A		
Constant Current Mode			
Range	0-100A	0-500A	0-1,000A
Accuracy *4	0.05%+0.05%F.S.		
Constant Resistance Mode			
Range	0.0012Ω-12Ω (6V/6kW) ; 0.0048Ω-48Ω (30V/6kW) ; 0.12Ω-240Ω (60V/6kW)		
Accuracy	Vin/Rset * (0.2%)+0.5% IF.S.		
Constant Voltage Mode			
Range	0-6V	0-30V	0-60V
Accuracy	0.025%+0.025%F.S.		
Constant Power Mode			
Range	0-600W	0-3,000W	0-6,000W
Accuracy *5	0.2%+0.2%F.S.		
Dynamic Mode			
Slew Rate	1mA/μs-2A/μs	5mA/μs-10A/μs	10mA/μs-20A/μs
Resolution	1mA/μs	5mA/μs	10mA/μs
Accuracy	5% ± 10μs		
Others			
Power Consumption	200VA (max.)		
Dimensions (HxWxD)	177 x 428 x 647mm/6.97 x 16.85 x 25.47 inch		
Weight	35kg/77.2 lbs		

SPECIFICATIONS-2 (150V)

150V Models	63202A-150-200			63203A-150-300			63204A-150-400		
Voltage *2	0-150V			0-150V			0-150V		
Current	0-20A	0-100A	0-200A	0-30A	0-150A	0-300A	0-40A	0-200A	0-400A
Power *3	0-2,000W			0-3,000W			0-4,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *11 *12	1.8V@200A			1.8V@300A			1.8V@400A		
Constant Current Mode									
Range	0-20A	0-100A	0-200A	0-30A	0-150A	0-300A	0-40A	0-200A	0-400A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.015Ω-150Ω (16V/2kW) 0.06Ω-600Ω (80V/2kW) 1.5Ω-3,000Ω (150V/2kW)			0.01Ω-100Ω (16V/3kW) 0.04Ω-400Ω (80V/3kW) 1Ω-2,000Ω (150V/3kW)			0.0075Ω-75Ω (16V/4kW) 0.03Ω-300Ω (80V/4kW) 0.75Ω-1,500 (150V/4kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-200W	0-1,000W	0-2,000W	0-300W	0-1,500W	0-3,000W	0-400W	0-2,000W	0-4,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.2mA/μs-2A/μs	1mA/μs-7A/μs	2mA/μs-14A/μs	0.2mA/μs-3A/μs	1mA/μs-10.5A/μs	2mA/μs-21A/μs	0.5mA/μs-4A/μs	2mA/μs-14A/μs	5mA/μs-28A/μs
Resolution	0.2mA/μs	1mA/μs	2mA/μs	0.2mA/μs	1mA/μs	2mA/μs	0.5mA/μs	2mA/μs	5mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	160VA (max.)			160VA (max.)			200VA (max.)		
Dimensions (HxWxD)	132.5 x 428 x 647mm/ 5.22 x 16.85 x 25.47 inch			132.5 x 428 x 647mm/ 5.22 x 16.85 x 25.47 inch			177 x 428 x 647 mm/ 6.97 x 16.85 x 25.47 inch		
Weight	30kg/66 lbs			30kg/66 lbs			35kg/77.2 lbs		

SPECIFICATIONS-3 (150V)

150V Models	63205A-150-500			63206A-150-600			63208A-150-800		
Voltage *2	0-150V			0-150V			0-150V		
Current	0-50A	0-250A	0-500A	0-60A	0-300A	0-600A	0-80A	0-400A	0-800A
Power *3	0-5,000W			0-6,000W			0-8,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *11 *12	1.8V@500A			1.8V@600A			1.8V@800A		
Constant Current Mode									
Range	0-50A	0-250A	0-500A	0-60A	0-300A	0-600A	0-80A	0-400A	0-800A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.005Ω-50Ω (16V/5kW) 0.02Ω-200Ω (80V/5kW) 0.5Ω-1,000Ω (150V/5kW)			0.005Ω-50Ω (16V/6kW) 0.02Ω-200Ω (80V/6kW) 0.5Ω-1,000Ω (150V/6kW)			0.0038Ω-37.5Ω (16V/8kW) 0.015Ω-150Ω (80V/8kW) 0.375Ω-750Ω (150V/8kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-500W	0-2,500W	0-5,000W	0-600W	0-3,000W	0-6,000W	0-800W	0-4,000W	0-8,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.5mA/μs-5A/μs	2mA/μs-17.5A/μs	5mA/μs-35A/μs	0.5mA/μs-6A/μs	2mA/μs-21A/μs	5mA/μs-42A/μs	1mA/μs-8A/μs	5mA/μs-24A/μs	10mA/μs-48A/μs
Resolution	0.5mA/μs	2mA/μs	5mA/μs	0.5mA/μs	2mA/μs	5mA/μs	1mA/μs	5mA/μs	10mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	200VA (max.)			200VA (max.)			400VA (max.)		
Dimensions (HxWxD)	177 x 428 x 647mm/ 6.97 x 16.85 x 25.47 inch			177 x 428 x 647mm/ 6.97 x 16.85 x 25.47 inch			307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch		
Weight	35kg/77.2 lbs			35kg/77.2 lbs			70kg/154.3 lbs		

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SPECIFICATIONS-4 (150V)

150V Models	63210A-150-1000			63212A-150-1200			63215A-150-1500		
Voltage *2	0-150V			0-150V			0-150V		
Current	0-100A	0-500A	0-1,000A	0-120A	0-600A	0-1,200A	0-150A	0-750A	0-1,500A
Power *3	0-10,000W			0-12,000W			0-15,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *11 *12	1.8V@1,000A			1.8V@1,200A			1.8V@1,500A		
Constant Current Mode									
Range	0-100A	0-500A	0-1,000A	0-120A	0-600A	0-1,200A	0-150A	0-750A	0-1,500A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.0025Ω-25Ω (16V/10kW) 0.01Ω-100Ω (80V/10kW) 0.25Ω-500Ω (150V/10kW)			0.0025Ω-25Ω (16V/12kW) 0.01Ω-100Ω (80V/12kW) 0.25Ω-500Ω (150V/12kW)			0.0017Ω-16.6667Ω (16V/15kW) 0.0067Ω-66.6667Ω (80V/15kW) 0.167Ω-333.334Ω (150V/15kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-1,000W	0-5,000W	0-10,000W	0-1,200W	0-6,000W	0-12,000W	0-1,500W	0-7,500W	0-15,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	1mA/μs-10A/μs	5mA/μs-27.5A/μs	10mA/μs-55A/μs	1mA/μs-12A/μs	5mA/μs-30A/μs	10mA/μs-60A/μs	2mA/μs-15A/μs	10mA/μs-32A/μs	20mA/μs-64A/μs
Resolution	1mA/μs	5mA/μs	10mA/μs	1mA/μs	5mA/μs	10mA/μs	2mA/μs	10mA/μs	20mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	400VA (max.)			400VA (max.)			600VA (max.)		
Dimensions (HxWxD)	307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch			307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch			441.1 x 428 x 670.5 mm/ 17.37 x 16.85 x 26.40 inch		
Weight	70kg/154.3 lbs			70kg/154.3 lbs			97kg/213.8 lbs		

SPECIFICATIONS-5 (150V)

150V Models	63218A-150-1800			63220A-150-2000			63224A-150-2000 *13		
Voltage *2	0-150V			0-150V			0-150V		
Current	0-180A	0-900A	0-1,800A	0-200A	0-1,000A	0-2,000A	0-200A	0-1,000A	0-2,000A
Power *3	0-18,000W			0-20,000W			0-24,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *11 *12	1.8V@1,800A			1.8V@2,000A			1.8V@2,000A		
Constant Current Mode									
Range	0-180A	0-900A	0-1,800A	0-200A	0-1,000A	0-2,000A	0-200A	0-1,000A	0-2,000A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.0017Ω-16.6667Ω (16V/18kW) 0.0067Ω-66.6667Ω (80V/18kW) 0.167Ω-333.334Ω (150V/18kW)			0.0013Ω-12.5Ω (16V/20kW) 0.005Ω-50Ω (80V/20kW) 0.125Ω-250Ω (150V/20kW)			0.0013Ω-12.5Ω (16V/24kW) 0.005Ω-50Ω (80V/24kW) 0.125Ω-250Ω (150V/24kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V	0-16V	0-80V	0-150V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-1,800W	0-9,000W	0-18,000W	0-2,000W	0-10,000W	0-20,000W	0-2,400W	0-12,000W	0-24,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	2mA/μs-18A/μs	10mA/μs-36A/μs	20mA/μs-72A/μs	2mA/μs-20A/μs	10mA/μs-40A/μs	20mA/μs-80A/μs	2mA/μs-20A/μs	10mA/μs-40A/μs	20mA/μs-80A/μs
Resolution	2mA/μs	10mA/μs	20mA/μs	2mA/μs	10mA/μs	20mA/μs	2mA/μs	10mA/μs	20mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	600VA (max.)			800VA (max.)			800VA (max.)		
Dimensions (HxWxD)	441.1 x 428 x 670.5 mm/ 17.37 x 16.85 x 26.40 inch			574.6 x 428 x 670.5 mm/ 22.64 x 16.85 x 26.40 inch			574.6 x 428 x 670.5 mm/ 22.64 x 16.85 x 26.40 inch		
Weight	97kg/213.8 lbs			125kg/275.6 lbs			125kg/275.6 lbs		

SPECIFICATIONS-6 (600V)

600V Models	63202A-600-140			63203A-600-210			63204A-600-280		
Voltage *2	0-600V			0-600V			0-600V		
Current	0-14A	0-70A	0-140A	0-21A	0-105A	0-210A	0-28A	0-140A	0-280A
Power *3	0-2,000W			0-3,000W			0-4,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	14V@140A			14V@210A			14V@280A		
Constant Current Mode									
Range	0-14A	0-70A	0-140A	0-21A	0-105A	0-210A	0-28A	0-140A	0-280A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.15Ω-1,500Ω (80V/2kW) 0.6Ω-6,000 (150V/2kW) 6Ω-12,000Ω (600V/2kW)			0.1Ω-1,000Ω (80V/3kW) 0.4Ω-4,000Ω (150V/3kW) 4Ω-8,000Ω (600V/3kW)			0.075Ω-750Ω (80V/4kW) 0.3Ω-3,000Ω (150V/4kW) 3Ω-6,000Ω (600V/4kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-200W	0-1,000W	0-2,000W	0-300W	0-1,500W	0-3,000W	0-400W	0-2,000W	0-4,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.2mA/μs-0.6A/μs	1mA/μs-3A/μs	2mA/μs-6A/μs	0.2mA/μs-0.9A/μs	1mA/μs-4.5A/μs	2mA/μs-9A/μs	0.4mA/μs-1.2A/μs	2mA/μs-6A/μs	4mA/μs-12A/μs
Resolution	0.2mA/μs	1mA/μs	2mA/μs	0.2mA/μs	1mA/μs	2mA/μs	0.4mA/μs	2mA/μs	4mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	160VA (max.)			160VA (max.)			200VA (max.)		
Dimensions (HxWxD)	132.5 x 428 x 647mm/ 5.22 x 16.85 x 25.47 inch			132.5 x 428 x 647mm/ 5.22 x 16.85 x 25.47 inch			177 x 428 x 647 mm/ 6.97 x 16.85 x 25.47 inch		
Weight	30kg/66 lbs			30kg/66 lbs			35kg/77.2 lbs		

SPECIFICATIONS-7 (600V)

600V Models	63205A-600-350			63206A-600-420			63208A-600-560		
Voltage *2	0-600V			0-600V			0-600V		
Current	0-35A	0-175A	0-350A	0-42A	0-210A	0-420A	0-56A	0-280A	0-560A
Power *3	0-5,000W			0-6,000W			0-8,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	14V@350A			14V@420A			14V@560A		
Constant Current Mode									
Range	0-35A	0-175A	0-350A	0-42A	0-210A	0-420A	0-56A	0-280A	0-560A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.05Ω-500Ω (80V/5kW) 0.2Ω-2,000Ω (150V/5kW) 2Ω-4,000Ω (600V/5kW)			0.05Ω-500Ω (80V/6kW) 0.2Ω-2,000Ω (150V/6kW) 2Ω-4,000Ω (600V/6kW)			0.038Ω-375Ω (80V/8kW) 0.15Ω-1,500Ω (150V/8kW) 1.5Ω-3,000Ω (600V/8kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-500W	0-2,500W	0-5,000W	0-600W	0-3,000W	0-6,000W	0-800W	0-4,000W	0-8,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.4mA/μs-1.5A/μs	2mA/μs-7.5A/μs	4mA/μs-15A/μs	0.4mA/μs-1.8A/μs	2mA/μs-9A/μs	4mA/μs-18A/μs	0.5mA/μs-1.8A/μs	2mA/μs-9A/μs	5mA/μs-18A/μs
Resolution	0.4mA/μs	2mA/μs	4mA/μs	0.4mA/μs	2mA/μs	4mA/μs	0.5mA/μs	2mA/μs	5mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	200VA (max.)			200VA (max.)			400VA (max.)		
Dimensions (HxWxD)	177 x 428 x 647mm / 6.97 x 16.85 x 25.47 inch			177 x 428 x 647mm / 6.97 x 16.85 x 25.47 inch			307.6 x 428 x 670.5 mm / 12.11 x 16.85 x 26.40 inch		
Weight	35kg/77.2 lbs			35kg/77.2 lbs			70kg/154.3 lbs		

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SPECIFICATIONS-8 (600V)

600V Models	63210A-600-700			63212A-600-840			63215A-600-1050		
Voltage *2	0-600V			0-600V			0-600V		
Current	0-70A	0-350A	0-700A	0-84A	0-420A	0-840A	0-105A	0-525A	0-1,050A
Power *3	0-10,000W			0-12,000W			0-15,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	14V@700A			14V@840A			14V@1,050A		
Constant Current Mode									
Range	0-70A	0-350A	0-700A	0-84A	0-420A	0-840A	0-105A	0-525A	0-1,050A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.025Ω-250Ω (80V/10kW) 0.1Ω-1,000Ω (150V/10kW) 1Ω-2,000Ω (600V/10kW)			0.025Ω-250Ω (80V/12kW) 0.1Ω-1,000Ω (150V/12kW) 1Ω-2,000Ω (600V/12kW)			0.017Ω-166.667Ω (80V/15kW) 0.067Ω-666.667Ω (150V/15kW) 0.67Ω-1,333.34Ω (600V/15kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-1,000W	0-5,000W	0-10,000W	0-1,200W	0-6,000W	0-12,000W	0-1,500W	0-7,500W	0-15,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.5mA/μs-2.1A/μs	2.5mA/μs-10.5A/μs	5mA/μs-21A/μs	1mA/μs-2.4A/μs	5mA/μs-12A/μs	10mA/μs-24A/μs	1mA/μs-2.7A/μs	5mA/μs-13.5A/μs	10mA/μs-27A/μs
Resolution	0.5mA/μs	2.5mA/μs	5mA/μs	1mA/μs	5mA/μs	10mA/μs	1mA/μs	5mA/μs	10mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	400VA (max.)			400VA (max.)			600VA (max.)		
Dimensions (HxWxD)	307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch			307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch			441.1 x 428 x 670.5 mm/ 17.37 x 16.85 x 26.40 inch		
Weight	70kg/154.3 lbs			70kg/154.3 lbs			97kg/213.8 lbs		

SPECIFICATIONS-9 (600V)

600V Models	63218A-600-1260			63220A-600-1400			63224A-600-1680		
Voltage *2	0-600V			0-600V			0-600V		
Current	0-126A	0-630A	0-1,260A	0-140A	0-700A	0-1,400A	0-168A	0-840A	0-1,680A
Power *3	0-18,000W			0-20,000W			0-24,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	14V@1,260A			14V@1,400A			14V@1,680A		
Constant Current Mode									
Range	0-126A	0-630A	0-1,260A	0-140A	0-700A	0-1,400A	0-168A	0-840A	0-1,680A
Accuracy *4	0.05%+0.05%F.S.			0.05%+0.05%F.S.			0.05%+0.05%F.S.		
Constant Resistance Mode									
Range	0.017Ω-166.667Ω (80V/18kW) 0.067Ω-666.667Ω (150V/18kW) 0.67Ω-1,333.34Ω (600V/18kW)			0.013Ω-125Ω (80V/20kW) 0.05Ω-500Ω (150V/20kW) 0.5Ω-1,000Ω (600V/20kW)			0.013Ω-125Ω (80V/24kW) 0.05Ω-500Ω (150V/24kW) 0.5Ω-1,000Ω (600V/24kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V	0-80V	0-150V	0-600V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-1,800W	0-9,000W	0-18,000W	0-2,000W	0-10,000W	0-20,000W	0-2,400W	0-12,000W	0-24,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	1mA/μs-3A/μs	5mA/μs-15A/μs	10mA/μs-30A/μs	2mA/μs-3.3A/μs	10mA/μs-16.5A/μs	20mA/μs-33A/μs	2mA/μs-3.6A/μs	10mA/μs-18A/μs	20mA/μs-36A/μs
Resolution	1mA/μs	5mA/μs	10mA/μs	2mA/μs	10mA/μs	20mA/μs	2mA/μs	10mA/μs	20mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	600VA (max.)			800VA (max.)			800VA (max.)		
Dimensions (HxWxD)	441.1 x 428 x 670.5 mm / 17.37 x 16.85 x 26.40 inch			574.6 x 428 x 670.5 mm / 22.64 x 16.85 x 26.40 inch			574.6 x 428 x 670.5 mm / 22.64 x 16.85 x 26.40 inch		
Weight	97kg/213.8 lbs			125kg/275.6 lbs			125kg/275.6 lbs		

SPECIFICATIONS-10 (1,200V)

1,200V Models	63202A-1200-80			63203A-1200-120			63204A-1200-160		
Voltage *2	0-1,200V			0-1,200V			0-1,200V		
Current	0-8A	0-40A	0-80A	0-12A	0-60A	0-120A	0-16A	0-80A	0-160A
Power *3 *10	0-2,000W			0-3,000W			0-4,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	20V@80A			20V@120A			20V@160A		
Constant Current Mode									
Range	0-8A	0-40A	0-80A	0-12A	0-60A	0-120A	0-16A	0-80A	0-160A
Accuracy *4	0.04%+0.06%F.S.			0.04%+0.06%F.S.			0.04%+0.06%F.S.		
Constant Resistance Mode									
Range	0.3Ω-3kΩ (150V/2kW) 1.2Ω-12kΩ (600V/2kW) 30Ω-60kΩ (1,200V/2kW)			0.2Ω-2kΩ (150V/3kW) 0.8Ω-8kΩ (600V/3kW) 20Ω-40kΩ (1,200V/3kW)			0.15Ω-1.5kΩ (150V/4kW) 0.6Ω-6kΩ (600V/4kW) 15Ω-30kΩ (1,200V/4kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-200W	0-1,000W	0-2,000W	0-300W	0-1,500W	0-3,000W	0-400W	0-2,000W	0-4,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.1mA/μs-0.4A/μs	0.5mA/μs-2A/μs	1mA/μs-4A/μs	0.1mA/μs-0.6A/μs	0.5mA/μs-3A/μs	1mA/μs-6A/μs	0.2mA/μs-0.8A/μs	1mA/μs-4A/μs	2mA/μs-8A/μs
Resolution	0.1mA/μs	0.5mA/μs	1mA/μs	0.1mA/μs	0.5mA/μs	1mA/μs	0.2mA/μs	1mA/μs	2mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	160VA (max.)			160VA (max.)			200VA (max.)		
Dimensions (HxWxD)	132.5 x 428 x 647mm/ 5.22 x 16.85 x 25.47 inch			132.5 x 428 x 647mm/ 5.22 x 16.85 x 25.47 inch			177 x 428 x 647mm / 6.97 x 16.85 x 25.47 inch		
Weight	30kg/66 lbs			30kg/66 lbs			35kg/77.2 lbs		

SPECIFICATIONS-11 (1,200V)

1,200V Models	63205A-1200-200			63206A-1200-240			63208A-1200-320		
Voltage *2	0-1,200V			0-1,200V			0-1,200V		
Current	0-20A	0-100A	0-200A	0-24A	0-120A	0-240A	0-32A	0-160A	0-320A
Power *3 *10	0-5,000W			0-6,000W			0-8,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	20V@200A			20V@240A			20V@320A		
Constant Current Mode									
Range	0-20A	0-100A	0-200A	0-24A	0-120A	0-240A	0-32A	0-160A	0-320A
Accuracy *4	0.04%+0.06%F.S.			0.04%+0.06%F.S.			0.04%+0.06%F.S.		
Constant Resistance Mode									
Range	0.1Ω-1kΩ (150V/5kW) 0.4Ω-4kΩ (600V/5kW) 10Ω-20kΩ (1200V/5kW)			0.1Ω-1kΩ (150V/6kW) 0.4Ω-4kΩ (600V/6kW) 10Ω-20kΩ (1200V/6kW)			0.075Ω-0.75kΩ (150V/8kW) 0.3Ω-3kΩ (600V/8kW) 7.5Ω-15kΩ (1200V/8kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-500W	0-2,500W	0-5,000W	0-600W	0-3,000W	0-6,000W	0-800W	0-4,000W	0-8,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.2mA/μs-1A/μs	1mA/μs-5A/μs	2mA/μs-10A/μs	0.2mA/μs-1.2A/μs	1mA/μs-6A/μs	2mA/μs-12A/μs	0.4mA/μs-1.2A/μs	2mA/μs-6A/μs	4mA/μs-12A/μs
Resolution	0.2mA/μs	1mA/μs	2mA/μs	0.2mA/μs	1mA/μs	2mA/μs	0.4mA/μs	2mA/μs	4mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	200VA (max.)			200VA (max.)			400VA (max.)		
Dimensions (HxWxD)	177 x 428 x 647mm/ 6.97 x 16.85 x 25.47 inch			177 x 428 x 647mm/ 6.97 x 16.85 x 25.47 inch			307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch		
Weight	35kg/77.2 lbs			35kg/77.2 lbs			70kg/154.3 lbs		

• Continued on next page ➟

SPECIFICATIONS-12 (1,200V)

1,200V Models	63210A-1200-400			63212A-1200-480			63215A-1200-600		
Voltage *2	0-1,200V			0-1,200V			0-1,200V		
Current	0-40A	0-200A	0-400A	0-48A	0-240A	0-480A	0-60A	0-300A	0-600A
Power *3 *10	0-10,000W			0-12,000W			0-15,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	20V@400A			20V@480A			20V@600A		
Constant Current Mode									
Range	0-40A	0-200A	0-400A	0-48A	0-240A	0-480A	0-60A	0-300A	0-600A
Accuracy *4	0.04%+0.06%F.S.			0.04%+0.06%F.S.			0.04%+0.06%F.S.		
Constant Resistance Mode									
Range	0.05Ω-0.5kΩ (150V/10kW) 0.2Ω-2kΩ (600V/10kW) 5Ω-10kΩ (1,200V/10kW)			0.05Ω-0.5kΩ (150V/12kW) 0.2Ω-2kΩ (600V/12kW) 5Ω-10kΩ (1,200V/12kW)			0.034Ω-0.333334kΩ (150V/15kW) 0.14Ω-1.33334kΩ (600V/15kW) 3.34Ω-6.66667kΩ (1,200V/15kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-1,000W	0-5,000W	0-10,000W	0-1,200W	0-6,000W	0-12,000W	0-1,500W	0-7,500W	0-15,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.4mA/μs-1.4A/μs	2mA/μs-7A/μs	4mA/μs-14A/μs	0.4mA/μs-1.6A/μs	2mA/μs-8A/μs	4mA/μs-16A/μs	0.5mA/μs-1.8A/μs	2mA/μs-9A/μs	5mA/μs-18A/μs
Resolution	0.4mA/μs	2mA/μs	4mA/μs	0.4mA/μs	2mA/μs	4mA/μs	0.5mA/μs	2mA/μs	5mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	400VA (max.)			400VA (max.)			600VA (max.)		
Dimensions (HxWxD)	307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch			307.6 x 428 x 670.5 mm/ 12.11 x 16.85 x 26.40 inch			441.1 x 428 x 670.5 mm/ 17.37 x 16.85 x 26.40 inch		
Weight	70kg/154.3 lbs			70kg/154.3 lbs			97kg/213.8 lbs		

SPECIFICATIONS-13 (1,200V)

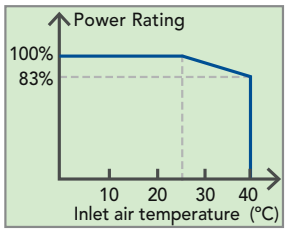
1,200V Models	63218A-1200-720			63220A-1200-800			63224A-1200-960 *13		
Voltage *2	0-1,200V			0-1,200V			0-1,200V		
Current	0-72A	0-360A	0-720A	0-80A	0-400A	0-800A	0-96A	0-480A	0-960A
Power *3 *10	0-18,000W			0-20,000W			0-24,000W		
Static Mode									
Typical Min. Operating Voltage (DC) *12	20V@720A			20V@800A			20V@960A		
Constant Current Mode									
Range	0-72A	0-360A	0-720A	0-80A	0-400A	0-800A	0-96A	0-480A	0-960A
Accuracy *4	0.04%+0.06%F.S.			0.04%+0.06%F.S.			0.04%+0.06%F.S.		
Constant Resistance Mode									
Range	0.034Ω-0.333334kΩ (150V/18kW) 0.14Ω-1.33334kΩ (600V/18kW) 3.34Ω-6.66667kΩ (1,200V/18kW)			0.025Ω-0.25kΩ (150V/20kW) 0.1Ω-1kΩ (600V/20kW) 2.5Ω-5kΩ (1,200V/20kW)			0.025Ω-0.25kΩ (150V/24kW) 0.1Ω-1kΩ (600V/24kW) 2.5Ω-5kΩ (1,200V/24kW)		
Accuracy	Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.			Vin/Rset * (0.2%)+0.2% IF.S.		
Constant Voltage Mode									
Range	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V	0-150V	0-600V	0-1,200V
Accuracy	0.025%+0.025%F.S.			0.025%+0.025%F.S.			0.025%+0.025%F.S.		
Constant Power Mode									
Range	0-1,800W	0-9,000W	0-18,000W	0-2,000W	0-10,000W	0-20,000W	0-2,400W	0-12,000W	0-24,000W
Accuracy *5	0.2%+0.2%F.S.			0.2%+0.2%F.S.			0.2%+0.2%F.S.		
Dynamic Mode									
Slew Rate	0.5mA/μs-2A/μs	2mA/μs-10A/μs	5mA/μs-20A/μs	1mA/μs-2.2A/μs	5mA/μs-11A/μs	10mA/μs-22A/μs	1mA/μs-2.4A/μs	5mA/μs-12A/μs	10mA/μs-24A/μs
Resolution	0.5mA/μs	2mA/μs	5mA/μs	1mA/μs	5mA/μs	10mA/μs	1mA/μs	5mA/μs	10mA/μs
Accuracy	5% ± 10μs			5% ± 10μs			5% ± 10μs		
Others									
Power Consumption	600VA (max.)			800VA (max.)			800VA (max.)		
Dimensions (HxWxD)	441.1 x 428 x 670.5 mm/ 17.37 x 16.85 x 26.40 inch			574.6 x 428 x 670.5 mm/ 22.64 x 16.85 x 26.40 inch			574.6 x 428 x 670.5 mm/ 22.64 x 16.85 x 26.40 inch		
Weight	97kg/213.8 lbs			125kg/275.6 lbs			125kg/275.6 lbs		

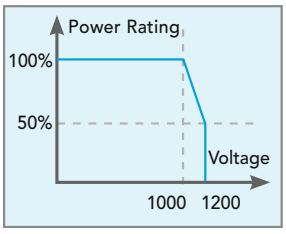
* All specifications are subject to change without notice.

GENERAL SPECIFICATIONS

Voltage	60V	150V	600V	1,200V
Static mode				
CZ				
Range	CL : 30μF-50,000μF ; RL : as CR ; Ls : 0.1μH-16μH ; Rs : 30mΩ-20Ω			
Resolution	CL : 1μF ; Ls : 0.1μH ; Rs : as CR ; RL : as CR			
CC+CV	Refer to CC & CV specifications			
CR+CV	Refer to CR & CV specifications			
CR+CC	Refer to CR & CC specifications			
Dynamic mode				
T1 & T2	0.010ms-99.999ms/100ms-99,999ms			
Resolution	1μs/1ms			
Accuracy	1μs+100ppm			
Min. rise time	20μs (Typical) *6	10μs (Typical) *6	20μs (Typical) *7	20μs (Typical) *8
Measurement				
Voltage read back				
Range *9	0 - rated voltage (three ranges)			
Accuracy	0.015%+0.015%F.S.			
Current read back				
Range	0 - rated current (three ranges)			
Accuracy	0.05%+0.05%F.S.	0.04%+0.04%F.S.		0.04%+0.06%F.S.
Power read back				
Range	0 - rated power (three ranges)			
Accuracy *5	0.1%+0.1%F.S.			
Battery Discharge				
Range	1s-100,000s			
Resolution	1s			
Monitor				
Voltage Monitor				
Bandwidth	20kHz			
Range	0-60V	0-150V	0-600V	0-1,200V
Output	0-10V			
Accuracy	0.5%F.S.			
Output impedance	10kΩ			
Resolution	4mV			
Current Monitor				
Bandwidth	20kHz			
Range	0 - rated current			
Output	0-10V			
Accuracy	0.5%F.S.			
Output impedance	10kΩ			
Resolution	4mV			
Protection				
Over Current	Yes (Settable)			
Over Power	Yes (Settable)			
Over Temperature	Yes			
Over Voltage Alarm	Yes			
Reverse Alarm	Yes			
Interfaces				
Standard	Front USB (Host), Rear USB (Device)			
Option	Ethernet/LXI, GPIB, CAN BUS			
System Bus	Master/Slave			
General				
Input Resistance (Load Off)	600kΩ (Typical)	800kΩ (Typical)	900kΩ (Typical)	1.8MΩ (Typical)
Operating Temp	0-40˚C			
Storage Temp	-20-80˚C			
Line Voltage	100-240 VAC/47-63Hz			

1. The specifications are guaranteed to meet specified performance at temperature range of 25±5˚C.
2. If the operating voltage exceeds the rated voltage for 1.05 times, it would cause permanent damage to the device.
3. The power rating specifications at ambient temperature = 25˚C and see the diagram below for power derating.
4. If the operating current is below range 0.2%, the accuracy specification is 0.1% F.S.
5. Power F.S. = Vrange F.S.x Irange F.S.
6. The specification is valid only for loading current > 4% F.S.
7. The specification is valid only for loading current > 3% F.S.
8. The specification is valid only for loading current > 5% F.S.
9. Example : 63204A-1200-160, the voltage ranges are 150V, 600V, and 1,200V.
10. For the power rating specifications of 1,200V models, see the diagrams for power derating.
11. The Typical minimum operating voltage is 1.8V and maximum is 2.5V.
12. Due to the specification range of the RDS (on) of internal power components, there are variations in the actual loadable current values for each load when the operating voltage is below the minimum operating voltage.
13. Specifications and operating conditions after upgrade:





Model	Voltage	Current	Power	Peak Power Capability	Duration
63224A-150-2000	0 to 150V	2,000A	24kW	103% to 200% (48kW)	100ms
63224A-1200-960	0 to 150V	960A	24kW	103% to 200% (48kW)	100ms
	>150V to 1,000V			103% to 130% (31.2kW)	100ms

Note: The above specifications are applicable under the condition that the dynamic average power does not exceed 100% of the unit's rated power at 25˚C. When the ambient temperature exceeds 25˚C, power derating protection will be activated, which may affect the peak power capability. Please contact Chroma for Peak Power upgrade details.

ORDERING INFORMATION

63200A Series High Power DC Electronic Load				
Model	Voltage	Current	Power	Height
63206A-60-1000	60V	1000A	6kW	4U
63202A-150-200	150V	200A	2kW	3U
63203A-150-300		300A	3kW	
63204A-150-400		400A	4kW	4U
63205A-150-500		500A	5kW	
63206A-150-600		600A	6kW	
63208A-150-800		800A	8kW	7U
63210A-150-1000		1000A	10kW	
63212A-150-1200		1200A	12kW	
63215A-150-1500		1500A	15kW	10U
63218A-150-1800		1800A	18kW	
63220A-150-2000		2000A	20kW	13U
63224A-150-2000		2000A	24kW	
63202A-600-140	600V	140A	2kW	3U
63203A-600-210		210A	3kW	
63204A-600-280		280A	4kW	4U
63205A-600-350		350A	5kW	
63206A-600-420		420A	6kW	
63208A-600-560		560A	8kW	7U
63210A-600-700		700A	10kW	
63212A-600-840		840A	12kW	
63215A-600-1050		1050A	15kW	10U
63218A-600-1260		1260A	18kW	
63220A-600-1400		1400A	20kW	13U
63224A-600-1680		1680A	24kW	
63202A-1200-80	1,200V	80A	2kW	3U
63203A-1200-120		120A	3kW	
63204A-1200-160		160A	4kW	4U
63205A-1200-200		200A	5kW	
63206A-1200-240		240A	6kW	
63208A-1200-320		320A	8kW	7U
63210A-1200-400		400A	10kW	
63212A-1200-480		480A	12kW	
63215A-1200-600		600A	15kW	10U
63218A-1200-720		720A	18kW	
63220A-1200-800		800A	20kW	13U
63224A-1200-960		960A	24kW	

options	
A600009	GPIB cable (200cm)
A600010	GPIB cable (60cm)
A632000	Softpanel for 63200A Series
A632006	NI USB-6211 Bus-Powered Multifunction DAQ
A632007	Over voltage protection box (for 1200V models only)
A632009	Slave model (600V/1680A/24kW)
A632010	Slave model (1200V/960A/24kW)
A632013	CAN BUS interface
A636000	GPIB interface
A636010	Ethernet interface
B632000	Handle for 3U models (2kW/3kW)
B632001	Handle for 4U models (4kW/5kW/6kW)
B632002	Rack mounting kit for 7U models (8kW/10kW/12kW)
B632003	Rack mounting kit for 10U models (15kW/18 kW)
B632004	Rack mounting kit for 13U models (20kW/24kW)
B632008	Low inductance cable (500A/1m)

* The 63200A series models with the same voltage but different power can be controlled in parallel simply through the master and slave settings. Once multiple units are integrated into the rack, be sure to pay special attention to ventilation. The 63200A series can parallel up to 10 units with maximum power 240kW, and if there is a demand for power higher than 240kW, please contact your local sales representative.

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