Chroma’s 63600 series DC electronic loads are designed for testing multi-output AC/DC power supplies, DC/DC converters, chargers, batteries, server power supplies, and power electronic components. They are excellent for research, development, production, and incoming inspection applications.

The 63600’s state of the art design uses DSP technology to simulate non-linear loads using a unique CZ operation mode allowing realistic loading behavior.

The 63600 series can draw its rated current under very low voltage (0.4V typical). This unique feature guarantees the best loading performance for modern Point-of-Load conditions and fuel cells.

The 63600 series can simulate a wide range of dynamic loading applications, with programmable load levels, slew rates, duration, and conducting voltage. The 63600 also has a dynamic sweep function to meet the test requirements of ATX power supplies. The instrument allows up to 100 sets of system operating status which can be stored in the EEPROM and recalled instantly for automated testing application.

Real time measurement of voltage and current are integrated into each 63600 load module using a 16-bit measurement circuit with three current ranges. The user can perform online voltage measurements and adjustments or simulate short circuit tests using the simple keypad on the front panel.

With the VFD display and rotary knob, the 63600 loads offer versatile front panel operation. Users are able to control the 63600 family remotely via Ethernet, USB, or GPIB interface.

Also included in the 63600 are self-diagnostic routines and full protections against OR, OC, OT and alarm indicating OV, reverse polarity. This ensures the quality and reliability of the 63600 and provides protection to units under test.
### Applications

#### Electric Vehicle Components

<table>
<thead>
<tr>
<th>DUT</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery</td>
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<tr>
<td>Charger</td>
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#### Storage power

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#### 3C Products

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<tr>
<td>DC to DC converter</td>
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### Low Voltage Operating Characteristics

- 0.4V@80A (typical)

### User Defined Waveform Function

### Master / Slave Parallel Control

### Constant Impedance Mode (CZ mode)

### Sine Wave Dynamic Function

### Digitizing Function

### User Defined Waveform Function

### Timing Function

### Maximum Power Point Tracking Function

### Auto Sweep for Dynamic Loading Test

### Over Current Protection Test
Chroma’s 63600 Series Programmable Electronic Load integrates micro-processing capability into each load module to optimize the speed and control among multiple load modules. All load modules are configured to work independently, though testing can be carried out simultaneously at multiple outputs via remote control to simulate real life application.

**VERSATILE SYSTEM CONFIGURATION**

The Chroma 63600 electronic load mainframe accepts the user-installable 63600 series load modules for easy system configuration. The model 63600-5 mainframe holds five 63610 load modules to offer up to 10 100W load input channels with standard front-panel inputs. The maximum power for a single mainframe is 2kW when five 63640-80-80 load modules are paralleled. This is suitable for testing multiple output switch mode power supplies, and many other types of power products. Using the GO/NG output port, production snapshots are made available to show the immediate pass/fail judgment of UUT. All modules on the mainframe share a common GPIB address to synchronize and speed up the control of the load modules and read back the operating data.

**APPLICATION OF SPECIFIC LOAD SIMULATION**

The 63600 series load modules operate in constant voltage, current, resistance, power, or impedance to satisfy a wide range of test requirements. For example, the CV is designed to simulate batteries for charger testing.

**Constant Current**

**Constant Resistance**

**Constant Voltage**

**Constant Power**

**CC Applications:**
1. Load/Cross regulation test for CV power supply
2. Battery discharge time test and life cycle test
3. Fuel cell testing
4. Loading pattern simulation for automotive wiper

**CR Applications:**
1. Test current limit point and slew rate for power supply
2. Soft start test for telecom power
3. Loading simulation for automotive temperature controller

**CV Applications:**
1. Charger test for mobile phone
2. Current limit test for fold back power supply
3. Fuel cell test
4. Current source test

**CP Applications:**
1. CP power test
2. Battery capacity test and capacity life cycle test
3. Pout vs Eff% curve test

**PRECISE MEASUREMENTS**

The 63600 series provides three operating current ranges and a built-in 16-bit, precision A/D converter, achieving 0.025%+0.01%F.S., 0.05%+0.05%F.S. and 0.1%+0.1%F.S. accuracy for voltage, current and power measurement respectively. Precise measurements like these are ideal for testing power efficiency and other critical parameters of the UUT’s. The precise measurement of 63600 series also meets the requirements of ENERGY STAR® and 80 Plus.

Besides, The 63600 series can measure OCP/OLP trip voltage and current by setting the step, step current, dwell time and so on. Then 63600 series will judge the test result for Pass or Fail and shows the maximum power (Pmax) on the display after completed the OCP/OLP test.

Two high-speed A/D are built in the 63600 series to measure the voltage and current at the same time and calculate the true power value for displaying without distortion.
The 63600 series offers 100 programmable loading sequences that enable the user to simulate various real world conditions. In addition, each module can be operated independently or synchronized so that all modules start operating at the same time while running independent programs. Below are some examples of the most popular program sequences available.

Simulations of all kinds of real current waveforms for battery discharge testing and other applications are possible. (Notebook, Electric car and Electric bike) (Single output channel for UUT)

Peak power cycle test for printer power (Three output channel for UUT)

Modern electronic devices operate at very high speed and demand rapid transient response characteristics. To address these applications the 63600 offers high speed, programmable dynamic loading, sweep simulation and control capability never before achieved. The right figure shows the programmable parameters which can be set within the 63600 loads: Waveforms can be single shot or set to repeat.

The dynamic mode provides a unique simulation capability allowing users to set the number of times each cycle repeats from 1~65,535. Feature is excellent for determining the peak current which can be sustained by converters.

The 63600 also offers a unique dynamic frequency sweep with variable frequencies up to 50kHz. This capability is ideal for determining worst case voltage peaks (see Figure 1). Measurement of the Vpeak (+/-) can be achieved by this function with a sampling rate of 500 kHz (Figure 2). The dynamic loading mode can simulate different loading conditions for most test requirements. Dedicated remote load sensors and control circuits guarantee minimum waveform distortion during dynamic loading.
According to Intel’s Design Guide for ATX 12V Power Supplies, measurement of output transient response requires simultaneous load steps when testing the power supply’s +12VDC, +5VDC and +3VDC outputs (all steps must occur at the same time). The 63600 provides a dynamic synchronous function that can be used to perform this test on up to 10 outputs within each mainframe. The total dynamic synchronous channels can up to 40 when using 4 mainframes providing higher flexible and increased utility.

In addition to the dynamic loading function the 63600 provides Master/Slave (parallel) operation of individual loads. This capability provides for up to 2,000W per mainframe. Figure 3 shows the parallel synchronous dynamic loading and Figure 4 shows the parallel non-synchronous dynamic loading of previous designs. As show, the Vpeak value is significantly reduced and incorrect when using non-synchronous loading.

**MASTER / SLAVE PARALLEL CONTROL**

When the need is for increased power, paralleling two or more loads can be done to achieve the desired load current. The 63600 provides the user with smart Master/Slave mode controls which enables the user to program the load currents of the Master and have them automatically calculated and downloaded to the slave modules. Using several loads in parallel to emulate a single load dramatically simplifies operation and allows the 63600 to be used for both multiple output power supplies and larger single output supplies. The 63600 can controlled and reconfigured with USB, Ethernet, and GPIB interfaces for automated testing applications.

**SINE WAVE DYNAMIC FUNCTION**

The 63600 has a unique sine wave loading function which allows setting of a current bias (I\_DC), a loading sine wave (I\_AC) and sine wave frequency without the need for an external function generator. As see in the figure right, CH1 is the actual load current and CH2 is the voltage waveform of the UUT. This function can be used in D2D/ATX Power supplies for sine wave dynamic testing.

**DIGITIZING FUNCTION**

The 63600 offers a digitizing function that makes the load very convenient for recording transients in both voltage and current waveforms. The following are the specifications of setting parameters:

- **Sampling Time**: 2µs to 40ms / R : 2µs (Setting the interval of sampling time)
- **Sampling Point**: 1 to 4096 (Setting the total sampling points)
Each 63600 load module contains 3 load current ranges with a minimum full current operating voltage of 0.5V for each range. At the minimum voltage (0.4V), the 63640-80-80 load can draw maximum current defined by the current range. Based on this design, the 63600 is well suited for testing DC/DC converters, fuel cells, and other low voltage - high current devices. Low voltage operation is possible towards zero volts with corresponding reduced current levels (see de-rating curves).

To reconstruct the actual current waveform, one can simply upload the captured waveform data into any module via a Chroma softpanel. Each module is capable of storing up to 10 sets of waveforms with each comprising up to 1.2 millions data points to meet the more strenuous test requirements.

In addition, 63600 series also provides voltage peak measurements during actual loading conditions. Avoiding the need for using an oscilloscope to capture the voltage peak, saving time and costs.

**LOW VOLTAGE OPERATION**

In addition to common constant current, constant voltage, constant power and constant resistance modes of conventional loads, the 63600 accepts digital data from DAQ cards or analog data from function generators to allow for complex waveforms to be created as depicted below. The 63600 also provides an enhanced feature, User Defined Waveform (UDW), to simulate the actual current profiles and waveforms.
**TIMING FUNCTION**

The 63600 loads include a unique timing & measurement function allowing precise time measurements in the range of 2ms to 100,000s. This feature allows users to set the final voltage & timeout values for battery discharge testing and other similar applications.

![Battery Discharge Testing](image)

**MPPT FUNCTION**

The 63600 series loads also include built-in Maximum Power Point Tracking function which is used for solar panel test. Just connect the solar panel to the 63600 loads, the loads will track the maximum power point of solar panel using a high speed built-in algorithm. The 63600 can also calculate the consumption of energy automatically.

![Solar Panel](image)

**SOFTWARE**

The 63600 loads can be operated from the front panel controls or from available softpanels. This user friendly software includes all functions of 63600s and is easy to understand and operate. The 63600 can be controlled via GPIB, USB and Ethernet interfaces for remote control and automated testing applications.

![Software Interface](image)
1. LCD Display: Used for setting and measurements
2. MODE key: Used to select the operating mode: CC, CR, CV, CP or CZ
3. DYNA key: To select dynamic test mode
4. EDIT key: Used for setting and editing
5. SHORT key: Used to apply a short circuit across the input
6. ADVA key: Used to select the other testing functions
7. Enter key: Used for confirming data entry
8. Voltage sense terminal
9. A/B key: Used to select static A or B load (63630, 63640)
   L/R key: Used to select left or right channel of input load (63610)
10. DATA key: Used to select the other parameters
11. RANGE key: Used to select HIGH, MIDDLE or LOW loading range
12. Rotary knob: Used to adjust loading and parameter setting
13. Cursor key: Used for setting and editing
14. LOAD key: Used to enable or disable the load input
15. Module lock: Used to remove the module
16. Load terminal
17. Power switch
18. LED display: Used to display the memory address
19. Up / Down key: Used to select the next or previous memory address
20. SPEC key: Used to setup High/Low limits for GO/NG test
21. LOCK key: Used to lock the setting data
22. SAVE key: Used to save the front panel input status into memory
23. RECALL key: Used to recall the front panel input status from memory
24. LOCAL key: Used to recover local control
25. Shortcut key: Used to save loading profile for all channels
26. Voltage & Current monitor output: Analog output to proportional to the voltage and current waveform
27. V EXT: Input for external wave in control
28. System I/O: Used for system input/output control signals
29. Ethernet connector
30. System Bus: Used for master/slave control system data communication
31. USB connector
32. GPIB connector
33. AC input fuse
34. AC Input connector
## SPECIFICATIONS-1

<table>
<thead>
<tr>
<th>Model</th>
<th>63610-80-20</th>
<th>63630-80-60</th>
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<tbody>
<tr>
<td>Configuration</td>
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<td>300W</td>
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<tr>
<td>Voltage *1</td>
<td>0~80V</td>
<td>0~80V</td>
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<tr>
<td>Current</td>
<td>0~0.2A</td>
<td>0~2A</td>
</tr>
<tr>
<td>Power *2</td>
<td>0~16W</td>
<td>0~30W</td>
</tr>
</tbody>
</table>

### Static Mode

**Typical Min. Operating Voltage (DC)**

- Model 63610-80-20: 0.5V@0.2A, 0.5V@2A, 0.5V@20A, 0.5V@60A
- Model 63630-80-60: 0.5V@0.6A, 0.5V@6A, 0.5V@60A

**Constant Current Mode**

- Range: 0~0.2A, 0~2A, 0~20A, 0~0.6A, 0~6A, 0~60A
- Resolution: 0.01mA, 0.1mA, 1mA, 0.01mA, 0.1mA, 1mA
- Accuracy: 0.1%±0.1%F.S., 0.1%±0.1%F.S.

**Constant Resistance Mode**

- RCL : 0.04~80Ω (100W/6V)
- CRM: 1.44~2.9Ω (100W/16V)
- CRH: 5.76~12kΩ (100W/80V)
- Resolution *9: 0.3288mS
- Accuracy *3: 0.1%±0.075Ω (6V)
- 0.1%±0.015Ω (16V)
- 0.1%±0.00375Ω (80V)

**Constant Voltage Mode**

- Range: 0~6V, 0~16V, 0~80V, 0~6V, 0~16V, 0~80V
- Resolution: 0.1mV, 1mV, 1mV, 0.1mV, 1mV, 1mV
- Accuracy: 0.05%±0.1%F.S., 0.05%±0.1%F.S.

**Constant Power Mode**

- Range: 0~2W, 0~10W, 0~100W, 0~6W, 0~30W, 0~300W
- Resolution *9: 1mW, 10mW, 100mW, 0.32mW, 32mW, 320mW
- Accuracy *4: 0.3%±0.3%F.S.

### Dynamic Mode - CC

**Min. Operating Voltage**

- 1.5V
- 1.5V

**Frequency**

- 100Hz~50kHz/0.01Hz~1kHz
- 100Hz~50kHz/0.01Hz~1kHz

**Duty**

- 1~99% (Min. Rise Time Dominated)
- 1~99% (Min. Rise Time Dominated)

**Accuracy**

- 1μs/1ms±100ppm
- 1μs/1ms±100ppm

**Slew Rate**

- 0.04A/ms~0.02A/μs
- 0.4A/ms~0.2A/μs
- 4A/ms~2A/μs
- 12A/ms~0.6A/μs
- 12A/ms~6A/μs

**Resolution**

- 0.01mA/μs
- 0.1mA/μs
- 1mA/μs
- 0.01mA/μs
- 0.1mA/μs
- 1mA/μs

**Accuracy**

- 0.3%±0.3%F.S.
- 0.3%±0.3%F.S.

**Accurate Range**

- 0~6V
- 0~10V
- 0~20A
- 0~0.6A
- 0~6A
- 0~60A

**Accuracy**

- 0.05%±0.1%F.S.
- 0.05%±0.1%F.S.

### Measurement

**Voltage Read Back**

- Range: 0~6V, 0~16V, 0~80V, 0~6V, 0~16V, 0~80V
- Resolution: 0.1069mV, 0.2849mV, 1.3537mV, 0.1069mV, 0.2849mV, 1.3537mV
- Accuracy *5: 0.025%+0.01%F.S., 0.01%±0.025%F.S., 0.025%+0.01%F.S., 0.01%±0.025%F.S.

**Current Read Back**

- Range: 0~0.2A, 0~2A, 0~20A, 0~0.6A, 0~6A, 0~60A
- Resolution: 0.003349mA, 0.034628mA, 0.329561mA, 0.009942mA, 0.101748mA, 1.009878mA
- Accuracy *5: 0.05%±0.05%F.S.

**Power Read Back**

- Range: 0~16W, 0~30W, 0~100W, 0~30W, 0~60W, 0~300W
- Accuracy *5: 0.1%±0.1%F.S., 0.1%±0.1%F.S.

**Voltage Monitor**

- Bandwidth: 20 kHz
- Range: 0~6V, 0~16V, 0~80V, 0~6V, 0~16V, 0~80V
- Output: 0~10V
- Accuracy: 0.5%F.S.

**Current Monitor**

- Bandwidth: 20 kHz
- Range: 0~0.2A, 0~2A, 0~20A, 0~0.6A, 0~6A, 0~60A
- Output: 0~10V
- Accuracy: 0.5%F.S.

*Continued on next page*
**SPECIFICATIONS-2**

**Configuration**
- Model 63630-600-15: 300W
- Model 63640-80-80: 400W
- Model 63640-150-60: 400W

**Voltage**
- 0~600V
- 0~80V
- 0~15V

**Current**
- 0~0.15A
- 0~1.5A
- 0~15A

**Power**
- 0~90W
- 0~300W
- 0~600W

**Static Mode**

- **Typical Min. Operating Voltage (DC)**
  - 2V: 0.15A
  - 2V: 1.5A
  - 2V: 15A

- **Resolution**
  - Voltage: 0.005mA
  - Current: 0.01mA

- **Accuracy**
  - Voltage: 0.1%+0.1% F.S.
  - Current: 0.1%+0.1% F.S.

**Constant Resistance Mode**

- **Range**
  - CRL: 0.133~270Ω (300W/80V)
  - CRM: 1.92~4kΩ (300W/150V)
  - CRH: 208~200kΩ (300W/600V)

- **Resolution**
  - Voltage: 0.2435mS

- **Accuracy**
  - Voltage: 0.1%+0.02S (80V)

**Dynamic Mode**

- **Min. Operating Voltage**
  - 3V

- **Frequency**
  - 100Hz~50kHz/0.01Hz~1kHz

- **Duty**
  - 1~99% (Min. Rise Time Dominated)

**Measurement**

- **Volage Read Back**
  - Range: 0~80V
  - Resolution: 0.14194mV

- **Current Read Back**
  - Range: 0~0.15A
  - Resolution: 0.00275mA

- **Power Read Back**
  - Range: 0~90W
  - Resolution: 0.02575mW
# GENERAL SPECIFICATION

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<tr>
<th>Model</th>
<th>63610-80-20</th>
<th>63630-80-60</th>
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## Protection

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<td>Over Temperature</td>
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## Interface

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## Dout

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<th>&lt;0.6V/I_sink=10mA</th>
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## Din (TTL Compatible, Rising Edge)

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<th></th>
<th>2 bits per mainframe</th>
<th>1 bit per mainframe</th>
<th>1 bit per mainframe</th>
<th>1 bit per mainframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of bits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Trig. for Digitizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Trig. for Auto Sequences (TTL Compatible, Rising Edge)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Load ON - O/P

<table>
<thead>
<tr>
<th></th>
<th>TTL Compatible, Level, Active High</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short ON - O/P</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Short circuit

<table>
<thead>
<tr>
<th></th>
<th>100%</th>
<th>87.5%</th>
<th>Set to 100% of rated current</th>
<th>700kΩ (Typical)</th>
<th>700kΩ (Typical)</th>
<th>2MΩ (Typical)</th>
<th>700kΩ (Typical)</th>
<th>700kΩ (Typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current *6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Resistance (Load Off)</td>
<td>700kΩ (Typical)</td>
<td>700kΩ (Typical)</td>
<td>2MΩ (Typical)</td>
<td>700kΩ (Typical)</td>
<td>700kΩ (Typical)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (HxWxD)</td>
<td>142 x 86 x 514 mm / 5.6 x 3.4 x 20.2 inch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>5 kg / 11 lbs</td>
<td>4 kg / 8.8 lbs</td>
<td>5 kg / 11 lbs</td>
<td>4.5 kg / 9.9 lbs</td>
<td>4.5 kg / 9.9 lbs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0~40°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20~80°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>Supply from mainframe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## EMC & Safety

<table>
<thead>
<tr>
<th></th>
<th>CE</th>
</tr>
</thead>
</table>

**NOTE**1: The maximum current loading below the minimum operating voltage (0.5V) will follow a derating curve.

**NOTE**2: The 400W power rating of the 63640-80-80 specified at an ambient temperature of 35°C, please refer to the power rating curve on the right.

**NOTE**3: Does not apply to setting current < 0.25% full scale current in high range. Does not apply to setting current < 0.05% full scale current in low and middle range.

**NOTE**4: The full scale is Vmax x Imax.

**NOTE**5: The DC level measurements are made over a period of 20ms, and does not measure any transient signals in the DC measurements.

**NOTE**6: Its limits are the maximum power and maximum current of the current range.

**NOTE**7: The 63600 is guaranteed to meet specified performance at temperature range of 25 ± 5°C.

**NOTE**8: If the operating voltage exceeds the rated voltage for 1.1 times, it would cause permanent damage to the device.

**NOTE**9: Please refer to user’s manual for detail specifications, and S (siemens) is the SI unit of conductance, equal to one reciprocal ohm.
### MAINFRAME SPECIFICATION

<table>
<thead>
<tr>
<th>Model</th>
<th>63600-1</th>
<th>63600-2</th>
<th>63600-5</th>
<th>63601-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of slots</td>
<td>1 slot</td>
<td>2 slots</td>
<td>5 slots</td>
<td>5 slots</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0~40˚C</td>
<td>0~40˚C</td>
<td>0~40˚C</td>
<td>0~40˚C</td>
</tr>
<tr>
<td>Input Rating</td>
<td>$\Omega$ 100<del>115V ± 10% $V_{lin}$, Switchable, 47</del>63Hz</td>
<td>$\Omega$ 100<del>115V ± 10% $V_{lin}$, Switchable, 47</del>63Hz</td>
<td>$\Omega$ 100<del>115V ± 10% $V_{lin}$, Switchable, 47</del>63Hz</td>
<td>$\Omega$ 100<del>115V ± 10% $V_{lin}$, Auto Range, 47</del>63Hz, 100<del>200V ± 10% $V_{lin}$, Auto Range, 47</del>63Hz</td>
</tr>
<tr>
<td>Mainframe dimension (HxWxD)</td>
<td>177x70.22x55.4mm / 7x2.76x21.8 inch</td>
<td>177x210x55.4mm / 7x8.27x21.8 inch</td>
<td>177x447x55.4mm / 7x17.6x21.8 inch (Full Rack)</td>
<td>177x447x55.4mm / 7x17.6x21.8 inch (Full Rack)</td>
</tr>
<tr>
<td>Weight</td>
<td>7.5kg / 16.53lbs</td>
<td>11.5kg / 23.35lbs</td>
<td>15.6kg / 34.39lbs</td>
<td>15.6kg / 34.39lbs</td>
</tr>
</tbody>
</table>

Note *1: None digital interface option
Note *2: The dual channel module 63610-80-20 can only be placed at the rightmost slot.

### ORDERING INFORMATION

- **63600-1**: 63600 Mainframe for Single Module
- **63600-2**: 63600 Mainframe for 2 Modules
- **63600-5**: 63600 Mainframe for 5 Modules (Max. 10 channels)
- **63601-5**: 63600 Mainframe for 5 Modules (Only one slot for dual channel load module, Max. 6 channels)
- **6310-80-20**: DC Load Module, 80V/20A/100Wx2
- **6330-80-60**: DC Load Module, 80V/60A/300W
- **6330-600-15**: DC Load Module, 600V/15A/300W
- **6340-80-80**: DC Load Module, 80V/80A/400W
- **6340-150-60**: DC Load Module, 150V/60A/400W
- **A636000**: GPIB Interface for 63600-2/63600-5/63601-5 Mainframe
- **A636001**: Ethernet Interface for 63600-2/63600-5 Mainframe
- **A636003**: External Signal Board (Test Pin) for 63600-2/63600-5 Mainframe
- **A636005**: External Signal Board (BNC) for 63600-2/63600-5 Mainframe
- **A636007**: Rack Mounting Kit for 63600-2 mainframe
- **A636008**: Rack Mounting Kit for 63600-5/63601-5 mainframe (for Europe only)
- **A632006**: NI USB-6211 Bus-Powered Multifunction DAQ