



## 500VA~90kVA

### KEY FEATURES

- Compact size and weight attributable to advance PWM technology
- AC+DC output mode for voltage DC offset simulation
- Programmable output impedance for IEC 61000-3-3
- IEC 61000-4-11, IEC 61000-4-14, IEC 61000-4-28 voltage dips and variation simulation
- Harmonics, inter-harmonics waveform synthesizer for IEC 61000-4-13 testing
- Power line disturbance simulation capability
- Programmable voltage, current limit
- Comprehensive measurement capability, including current harmonics
- High output current crest factor, ideal for inrush current testing
- Turn on, turn off phase angle control
- TTL signal which indicates output transient
- Optional analog programmable interface
- 2 units combined in series for high Voltage source
- 3 units combined to 3-phase power output
- Optional GPIB and RS-232 interface (Model 61501~61505)
- Easy use graphic user interface: softpanel (Option)
- Softpanel for IEC regulation test (Model 61501~61505)
- Capable of delivering power output up to 90KVA by implementing Master-slave parallel operation



The 61500 series AC power source defines new standard for high performance AC power source. It equips with all the powerful features. Such as power line disturbance simulation, programmable output impedance, comprehensive measurement function, wave-shape synthesis and regulation test software. Chroma also provides software for aerospace testing, including MIL-STD-704F, RTCA DO-160D, ABD100. These features make Chroma 61500 ideal for commercial, power electronics, avionics, marine, military and regulation test applications from bench-top testing to mass productions.

The 61500 series line up range from 500VA up to 90kVA, with one or three phase output. This allows user to have maximum choices from R/D design verification, quality assurance, to production testing.

Using the state-of-the-art PWM technology, the Chroma 61500 AC source is capable of delivering up to 6 times of peak current (Model 61501~61505) verses to its maximum rated current which makes it ideal for inrush current testing.

By using advanced DSP technology, 61500 AC power source offers precision and high speed power and harmonics measurements such as RMS voltage, RMS current, true power, power factor, current crest factor and up to 40 orders of current harmonics components.

The 61500 AC power source allows users to compose different harmonic components to synthesize your own harmonic distorted wave-shapes. The DC and AC+DC mode also extend the applications to simulate the natural waveform, Chroma 61500 also provides an external analog input, to amplify the analog signal from arbitrary signal generator. Thus, it is capable to simulate the unique waveform observed in the field.

With the versatile programmable output impedance and regulation test software, the 61500 AC power source allows users to perform Pre-compliance test against IEC 61000-4-11 and compliance test against IEC 61000-4-11/-4-13/-4-14/-4-28 immunity test regulations and IEC 61000-3-2/-3-3 emission test regulations by incorporating Chroma 6630 power analyzer.

### ORDERING INFORMATION

- 61501** : Programmable AC Source 0~300V, 15~1kHz / 500VA, 1 $\phi$
- 61502** : Programmable AC Source 0~300V, 15~1kHz / 1kVA, 1 $\phi$
- 61503** : Programmable AC Source 0~300V, 15~1kHz / 1.5kVA, 1 $\phi$
- 61504** : Programmable AC Source 0~300V, 15~1kHz / 2kVA, 1 $\phi$
- 61505** : Programmable AC Source 0~300V, 15~1kHz / 4kVA, 1 $\phi$
- 61511** : Programmable AC Source 0~300V, 15~1.5kHz / 12kVA, 1 or 3 $\phi$
- 61512** : Programmable AC Source 0~300V, 15~1.5kHz / 18kVA, 1 or 3 $\phi$
- A615001** : Remote Interface Board for 61500/61600/61700 Series (External V Input, RS-232 Interface, GPIB Interface)
- A610004** : Universal Socket Center for Model 6512/6520/6530/6560/6415/6420/6430/61500/61600/61700 Series (<15A)
- A615007** : Softpanel for Model 61500/61600 Series
- A615008** : DC Noise Filter (Max. 16A)
- \*A615101** : AC Source Remote Controller for 61511/61512/61611/61612
- A615103** : Parallelable power stage unit 18kVA, 1 or 3 $\phi$ , for 61511/61512/61611/61612
- A615104** : Input/Output terminals for parallel connecting 2 units of 61511/61512/61611/61612/A615103
- A615105** : Input/Output terminals for parallel connecting 3 units of 61511/61512/61611/61612/A615103
- \*A615106** : Reverse Current Protection unit for 61511/61512/61611/61612/A615103

Option for 277VLN/480VLL (5Wires) AC input voltage are available with 61511/61512/ 61611/61612/A615103 models. Please contact with local sales representative for ordering information.

\* Call for availability



Model 61505



Model 61511, 61512



A615103 Parallelable Power stage Unit 18KVA



A615101 AC Source Remote Controller

| SPECIFICATIONS-1                                  |   |   |   |
|---|---|---|---|
| Model   | 61501   | 61502   | 61503   |
| Output Phase                                      | 1   | 1   | 1   |
| <b>Output Rating -AC</b>                          |   |   |   |
| Power   | 500VA   | 1000VA  | 1500VA  |
| <b>Voltage</b>                                    |   |   |   |
| Range/Phase                                       | 150V/300V/Auto  | 150V/300V/Auto  | 150V/300V/Auto  |
| Accuracy  | 0.2%+0.2%F.S.   | 0.2%+0.2%F.S.   | 0.2%+0.2%F.S.   |
| Resolution  | 0.1V  | 0.1V  | 0.1V  |
| Distortion*1                                      | 0.3% @ 50/60Hz<br>1% @ 15-1kHz (Typical)              | 0.3% @ 50/60Hz<br>1% @ 15-1kHz (Typical)              | 0.3% @ 50/60Hz<br>1% @ 15-1kHz (Typical)              |
| Line Regulation                                   | 0.1%  | 0.1%  | 0.1%  |
| Load Regulation*2                                 | 0.2%  | 0.2%  | 0.2%  |
| <b>Max. Current</b>                               |   |   |   |
| R.m.s.  | 4A/2A (150V/300V)                                     | 8A/4A (150V/300V)                                     | 12A/6A (150V/300V)                                    |
| Peak  | 24A/12A (150V/300V)                                   | 48A/24A (150V/300V)                                   | 72A/36A (150V/300V)                                   |
| <b>Frequency</b>                                  |   |   |   |
| Range   | DC, 15 ~ 1kHz   | DC, 15 ~ 1kHz   | DC, 15 ~ 1kHz   |
| Accuracy  | 0.15%   | 0.15%   | 0.15%   |
| <b>Output Rating-DC</b>                           |   |   |   |
| Power   | 250W  | 500W  | 750W  |
| Voltage   | 212V/424V   | 212V/424V   | 212V/424V   |
| Current   | 2A/1A (212V/424V)                                     | 4A/2A (212V/424V)                                     | 6A/3A (212V/424V)                                     |
| <b>Programmable Output Impedance</b>              |   |   |   |
| Range   | 0 Ω +200μH ~ 1 Ω +1mH                                 |   |   |
| <b>Harmonics &amp; Inter-harmonics Simulation</b> |   |   |   |
| Bandwidth   | 2400Hz  | 2400Hz  | 2400Hz  |
| <b>Input Rating</b>                               |   |   |   |
| Voltage Range                                     | 90~250V, 1Ø   | 90~250V, 1Ø   | 90~250V, 1Ø   |
| Frequency Range                                   | 47~63Hz   | 47~63Hz   | 47~63Hz   |
| Current (per phase)                               | 10A Max. @ 90V  | 18A Max. @ 90V  | 22A Max. @ 90V  |
| Power Factor*4                                    | 0.97 Min.   | 0.97 Min.   | 0.98 Min.   |
| <b>Measurement</b>                                |   |   |   |
| <b>Voltage</b>                                    |   |   |   |
| Range   | 150V/300V   | 150V/300V   | 150V/300V   |
| Accuracy  | 0.2%+0.2%F.S.   | 0.2%+0.2%F.S.   | 0.2%+0.2%F.S.   |
| Resolution  | 0.1V  | 0.1V  | 0.1V  |
| <b>Current</b>                                    |   |   |   |
| Range (peak)                                      | 24A   | 48A   | 72A   |
| Accuracy (r.m.s.)                                 | 0.4%+0.3%F.S.   | 0.4%+0.3%F.S.   | 0.4%+0.3%F.S.   |
| Accuracy (peak)                                   | 0.4%+0.6%F.S.   | 0.4%+0.6%F.S.   | 0.4%+0.6%F.S.   |
| <b>Power</b>                                      |   |   |   |
| Accuracy  | 0.4%+0.4%F.S.   | 0.4%+0.4%F.S.   | 0.4%+0.4%F.S.   |
| Resolution  | 0.1W  | 0.1W  | 0.1W  |
| <b>Harmonics</b>                                  |   |   |   |
| Range   | 2~40 orders   | 2~40 orders   | 2~40 orders   |
| <b>Others</b>                                     |   |   |   |
| Interface   | GPIB, RS-232 (Optional)                               |   |   |
| <b>Temperature</b>                                |   |   |   |
| Operating   | 0 ~ 40°C  | 0 ~ 40°C  | 0 ~ 40°C  |
| Storage   | -40 ~ +85°C   | -40 ~ +85°C   | -40 ~ +85°C   |
| <b>Safety &amp; EMC</b>                           |   |   |   |
| Dimensions (HxWxD)                                | CE ( include EMC & LVD )                              |   |   |
| Weight  | 133.35 x 482.6 x 569.5 mm /<br>5.25 x 19 x 22.42 inch | 133.35 x 482.6 x 569.5 mm /<br>5.25 x 19 x 22.42 inch | 133.35 x 482.6 x 569.5 mm /<br>5.25 x 19 x 22.42 inch |
|   | 20 kg / 44.05 lbs                                     | 20 kg / 44.05 lbs                                     | 20 kg / 44.05 lbs                                     |

**Note\*1** : Maximum distortion is tested on output 125VAC (150V RANGE) and 250VAC (300V RANGE) with maximum current to linear load.

**Note\*2** : Load regulation is tested with sine wave and remote sense.

**Note\*3** : Model 61505 can also use single-phase connecting method of input AC power, the maximum input current is 28A @ 190V.

**Note\*4** : Input power factor is tested on input 220V, full load condition.

Photovoltaic Test Equipment  
Semiconductor/IC Test Equipment  
LED Test Equipment  
LCD/LCM Test Equipment  
Video & Color Test Equipment  
Optical Inspection Equipment  
Power Electronics Test Equipment  
Passive Component Test Instruments  
Electrical Safety Test Instruments  
General Purpose Test Instruments  
PXI Instruments & Systems

## Softpanel



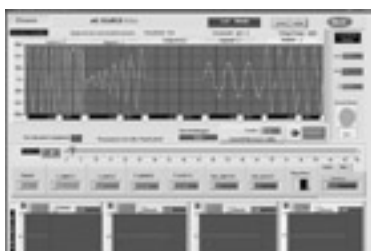
Main Operation Menu



Distorted Waveform Editor



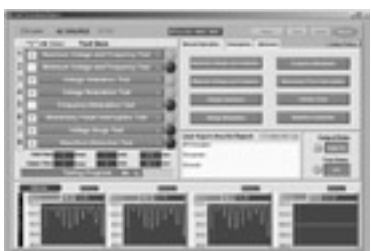
Aerospace Testing : MIL-STD-704F



Transient Voltage Programming



Voltage Dip, Short, Variation Regulation Test



Aerospace Testing : RTCA DO-160D

| SPECIFICATIONS-2                                  |   |  |
|---|---|--|
| Model   | 61504   | 61505  |
| Output Phase                                      | 1   | 1  |
| <b>Output Rating -AC</b>                          |   |  |
| Power   | 2000VA  | 4000VA   |
| <b>Voltage</b>                                    |   |  |
| Range/Phase                                       | 150V/300V/Auto  | 150V/300V/Auto                                       |
| Accuracy  | 0.2%+0.2%F.S.   | 0.2%+0.2%F.S.  |
| Resolution  | 0.1V  | 0.1V   |
| Distortion*1                                      | 0.3% @ 50/60Hz<br>1% @ 15-1kHz (Typical)              | 0.3% @ 50/60Hz<br>1% @ 15-1kHz (Typical)             |
| Line Regulation                                   | 0.1%  | 0.1%   |
| Load Regulation*2                                 | 0.2%  | 0.2%   |
| <b>Max. Current</b>                               |   |  |
| R.m.s.  | 16A/8A (150V/300V)                                    | 32A/20A (150V/300V)                                  |
| Peak  | 96A/48A (150V/300V)                                   | 192A/96A (150V/300V)                                 |
| <b>Frequency</b>                                  |   |  |
| Range   | DC, 15 ~ 1kHz   | DC, 15 ~ 1kHz  |
| Accuracy  | 0.15%   | 0.15%  |
| <b>Output Rating-DC</b>                           |   |  |
| Power   | 1000W   | 2000W  |
| Voltage   | 212V/424V   | 212V/424V  |
| Current   | 8A/4A (212V/424V)                                     | 16A/8A (212V/424V)                                   |
| <b>Programmable Output Impedance</b>              |   |  |
| Range   |   |  |
| <b>Harmonics &amp; Inter-harmonics Simulation</b> |   |  |
| Bandwidth   | 2400Hz  | 2400Hz   |
| <b>Input Rating</b>                               |   |  |
| Voltage Range                                     | 90~250V, 1Ø   | 190~250V, 3Ø*3                                       |
| Frequency Range                                   | 47~63Hz   | 47~63Hz  |
| Current (per phase)                               | 28A Max. @ 90V  | 14A Max. @ 190V                                      |
| Power Factor*4                                    | 0.98 Min.   | 0.98 Min.  |
| <b>Measurement</b>                                |   |  |
| <b>Voltage</b>                                    |   |  |
| Range   | 150V/300V   | 150V/300V  |
| Accuracy  | 0.2%+0.2%F.S.   | 0.2%+0.2%F.S.  |
| Resolution  | 0.1V  | 0.1V   |
| <b>Current</b>                                    |   |  |
| Range (peak)                                      | 96A   | 192A   |
| Accuracy (r.m.s.)                                 | 0.4%+0.3%F.S.   | 0.4%+0.3%F.S.  |
| Accuracy (peak)                                   | 0.4%+0.6%F.S.   | 0.4%+0.6%F.S.  |
| <b>Power</b>                                      |   |  |
| Accuracy  | 0.4%+0.4%F.S.   | 0.4%+0.4%F.S.  |
| Resolution  | 0.1W  | 0.1W   |
| <b>Harmonics</b>                                  |   |  |
| Range   | 2~40 orders   | 2~40 orders  |
| <b>Others</b>                                     |   |  |
| <b>Interface</b>                                  |   |  |
| <b>Temperature</b>                                |   |  |
| Operating   | 0 ~ 40°C  | 0 ~ 40°C   |
| Storage   | -40 ~ +85°C   | -40 ~ +85°C  |
| <b>Safety &amp; EMC</b>                           |   |  |
| Dimensions  | 133.35 x 482.6 x 569.5 mm /<br>5.25 x 19 x 22.42 inch | 266.7 x 482.6 x 569.5 mm /<br>10.5 x 19 x 22.42 inch |
| Weight  | 20 kg / 44.05 lbs                                     | 41 kg / 90.31 lbs                                    |

**Note\*1** : Maximum distortion is tested on output 125VAC (150V RANGE) and 250VAC (300V RANGE) with maximum current to linear load.

**Note\*2** : Load regulation is tested with sine wave and remote sense.

**Note\*3** : Models with 277VLN/480VLL(5 Wires) AC input voltage are available upon request.

**Note\*4** : Efficiency is tested on input voltage 230V.

**Note\*5** : Dimensions (HxWxD) with wheel sets : 1246 x 546 x 700mm / 49.05 x 21.5 x 27.56 inch.

| SPECIFICATIONS-3                                |   |                       |   |                      |
|---|---|-----------------------|---|----------------------|
| Model   | 61511   | 61512                 | 61511+A615103   | 61512+A615103        |
| <b>Output Phase</b>                             | 1 or 3 selectable                                 |                       |   |                      |
| <b>Output Rating-AC</b>                         |   |                       |   |                      |
| Power   | 12kVA   | 18kVA                 | 30kVA   | 36kVA                |
| Each phase                                      | 4kVA  | 6 kVA                 | 10kVA   | 12kVA                |
| <b>Voltage</b>                                  |   |                       |   |                      |
| Range   | 0~150V/0~300V                                     |                       |   |                      |
| Accuracy  | 0.2%+0.2%F.S.                                     |                       |   |                      |
| Resolution                                      | 0.1 V   |                       |   |                      |
| Distortion *1                                   | 0.3% @50/60Hz, 1%@15~1kHz, 1.5%>1kHz              |                       |   |                      |
| Line regulation                                 | 0.1%  |                       |   |                      |
| Load regulation *2                              | 0.2%  |                       |   |                      |
| Temp. coefficient                               | 0.02% per degree from 25°C                        |                       |   |                      |
| <b>Max Current (1-phase mode)</b>               |   |                       |   |                      |
| RMS   | 96A / 48A   | 144A / 72A            | 240A / 120A   | 288A / 144A          |
| Peak (CF=4)                                     | 384A / 192A                                       | 576A / 288A           | 960A / 480A   | 1152A / 576A         |
| <b>Max Current (each phase in 3-phase mode)</b> |   |                       |   |                      |
| RMS   | 32A / 16A   | 48A / 24A             | 80A / 40A   | 96A / 48A            |
| Peak (CF=4)                                     | 128A / 64A  | 192A / 96A            | 320A / 160A   | 384A / 192A          |
| <b>Frequency</b>                                |   |                       |   |                      |
| Range   | DC, 15-1.5kHz                                     |                       |   |                      |
| Accuracy  | 0.15%   |                       |   |                      |
| <b>Phase</b>                                    |   |                       |   |                      |
| Range   | 0 ~ 360°  |                       |   |                      |
| Resolution                                      | 0.3°  |                       |   |                      |
| Accuracy  | <0.8° @50/60Hz                                    |                       |   |                      |
| <b>DC Output (1-phase mode)</b>                 |   |                       |   |                      |
| Power   | 6kW   | 9kW                   | 15kW  | 18kW                 |
| Voltage   | 212V / 424V                                       | 212V / 424V           | 212V / 424V   | 212V / 424V          |
| Current   | 48A / 24A   | 72A / 36A             | 120A / 60A  | 144A / 72A           |
| <b>DC Output (3-phase mode)</b>                 |   |                       |   |                      |
| Power   | 2kW   | 3kW                   | 5kW   | 6kW                  |
| Voltage   | 212V / 424V                                       | 212V / 424V           | 212V / 424V   | 212V / 424V          |
| Current   | 16A / 8A  | 24A / 12A             | 40A / 20A   | 48A / 24A            |
| <b>Input AC Power (each phase)</b>              |   |                       |   |                      |
| AC type   | 3-phase, Delta or Y connecting                    |                       |   |                      |
| Voltage range*3                                 | 190-250V (Delta: L-L, Y: L-N)                     |                       |   |                      |
| Frequency range                                 | 47-63 Hz  |                       |   |                      |
| Max. current                                    | Delta: 80A Y: 70A                                 | Delta: 120A Y: 90A    | Delta: 200A Y: 160A   | Delta: 240A Y: 180A  |
| <b>Measurement</b>                              |   |                       |   |                      |
| <b>Voltage</b>                                  |   |                       |   |                      |
| Range   | 150V / 300V                                       |                       |   |                      |
| Accuracy  | 0.2%+0.2%F.S.                                     |                       |   |                      |
| Resolution                                      | 0.1 V   |                       |   |                      |
| <b>Current</b>                                  |   |                       |   |                      |
| Range   | 128/32/8 A peak                                   | 192/48/12 A peak      | 320/80/20 A peak  | 384/96/24 A peak     |
| Accuracy (rms)                                  | 0.4%+0.3%F.S.                                     |                       |   |                      |
| Accuracy (peak)                                 | 0.4%+0.6%F.S.                                     |                       |   |                      |
| Resolution                                      | 0.1 A   |                       |   |                      |
| <b>Power</b>                                    |   |                       |   |                      |
| Accuracy  | 0.4%+0.4% F.S.                                    |                       |   |                      |
| Resolution                                      | 0.1 W   |                       |   |                      |
| <b>Others</b>                                   |   |                       |   |                      |
| Waveform Synthesis                              | 40 orders @ 50/60Hz                               |                       |   |                      |
| Harmonic measurement                            | Voltage / Current 40 orders @ 50/60Hz             |                       |   |                      |
| Programmable impedance                          | 0Ω+200μH ~ 1Ω+1mH                                 |                       |   |                      |
| <b>Efficiency*4</b>                             | 0.75 (Typical)                                    |                       |   |                      |
| <b>Protect</b>                                  | UVP, OCP, OPP, OTP, FAN                           |                       |   |                      |
| <b>Interface</b>                                | GPIB, RS-232, USB, Ethernet (standard)            |                       |   |                      |
| <b>Temperature</b>                              |   |                       |   |                      |
| Operation                                       | 0°C ~40°C   |                       |   |                      |
| Storage   | -40°C~85°C  |                       |   |                      |
| Humidity  | 30 %~90 %   |                       |   |                      |
| <b>Safety &amp; EMC</b>                         |   |                       |   |                      |
|   | CE  |                       |   |                      |
| <b>Dimensions (H x W x D)</b>                   | 1163 x 546 x 700 mm / 45.78 x 21.5 x 27.56 inch*5 |                       | 1163 x 546 x 700 mm / 45.78 x 21.5 x 27.56 inch x 2 units*5 |                      |
| <b>Weight</b>                                   | 229.4 kg / 505.29 lbs                             | 242.4 kg / 533.92 lbs | 480 kg / 1057.27 lbs  | 495 kg / 1090.31 lbs |

**Note\*1** : Maximum distortion is tested on output 125VAC (150V RANGE) and 250VAC (300V RANGE) with maximum current to linear load.

**Note\*2** : Load regulation is tested with sine wave and remote sense.

**Note\*3** : Models with 277VLN/480VLL(5 Wires) AC input voltage are available upon request.

**Note\*4** : Efficiency is tested on input voltage 230V.

**Note\*5** : Dimensions (HxWxD) with wheel sets : 1246 x 546 x 700mm / 49.05 x 21.5 x 27.56 inch.

All specifications are subject to change without notice.

Photovoltaic  
Test Equipment  
Semiconductor/IC  
Test Equipment  
LED  
Test Equipment  
LCD/LCM  
Test Equipment  
Video & Color  
Test Equipment  
Optical Inspection  
Equipment  
Power Electronics  
Test Equipment  
Passive Components  
Test Instruments  
Electrical Safety  
Test Instruments  
General Purpose  
Test Instruments  
PXI Instruments  
& Systems