



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 frequency variation simulation
- Harmonics, interharmonics waveform synthesizer for IEC 61000-4-13 testing
- Power line disturbance simulation capability
- Programmable voltage and current limit settings
- 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 (Model 61501~61505)
- 3 units combined to 3-phase power output (Model 61501~61505)
- Optional GPIB and RS-232 interface (Model 61501~61505)
- Easy use graphic user interface: softpanel (Option)
- Softpanel for IEC regulation test
- 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) versus 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 AC+DC and 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 61000-4-13/-4-14/-4-28 immunity test regulations and IEC 61000-3-2/-3-3 emission test regulations by incorporating a flicker meter.



Model 61501~61504



Model 61505



Model 61509



Model 61511, 61512



A615103 Parallelable Power stage Unit 18KVA

ORDERING INFORMATION

61501 : Programmable AC Source 0~300V, 15~1kHz / 500VA, 1Ø

61502 : Programmable AC Source 0~300V, 15~1kHz / 1kVA, 1Ø

61503 : Programmable AC Source 0~300V, 15~1kHz / 1.5kVA, 1Ø

61504 : Programmable AC Source 0~300V, 15~1kHz / 2kVA, 1Ø

61505 : Programmable AC Source 0~300V, 15~2kHz / 6kVA, 1Ø

* **61509** : Programmable AC Source 0~350V, 15~1kHz / 4kVA, 1 or 3Ø

61511 : Programmable AC Source 0~300V, 15~1.5kHz / 12kVA, 1 or 3Ø

61512 : Programmable AC Source 0~300V, 15~1.5kHz / 18kVA, 1 or 3Ø

A615001 : Remote Interface for 61501~61505 and 61601~61605 (External V Input, RS-232 Interface, GPIB Interface)

A615002 : Remote interface board (LAN and USB) for Model 61500/61600/61700 Series

A615003 : AC voltage transform unit for Model 61500/61600 Series

A615007 : Softpanel for Model 61500/61600 Series

A615008 : DC Noise Filter (Max. 16A)

* **A615010** : Aerospace softpanel for RTCA DO-160G standard

A615011 : Aerospace softpanel for MIL-STD-704F standard

A615103 : Parallelable power stage unit 18kVA, 1 or 3Ø, 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

* Call for availability

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

Support higher than 300V output voltage capability, please contact Chroma sales representative for detailed information.

- Video & Color
- Flat Panel Display
- LED/ Lighting
- Optical Devices
- Photovoltaic test & Automation
- Automated Optical Inspection
- Power Electronics
- Battery Test & Automation
- Passive Component
- Electrical Safety
- Semiconductor/ IC
- PXI Test & Measurement
- General Purpose
- Intelligent Manufacturing System
- Turnkey Test & Automation

SPECIFICATIONS-1			
Model	61501	61502	61503
Output Phase	1	1	1
Output Rating -AC			
Power	500VA	1000VA	1500VA
Voltage			
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 1% @ 15-1kHz	0.3% @ 50/60Hz 1% @ 15-1kHz	0.3% @ 50/60Hz 1% @ 15-1kHz
Line Regulation	0.1%	0.1%	0.1%
Load Regulation*2	0.2%	0.2%	0.2%
Max. Current			
RMS	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)
Frequency			
Range	DC, 15 ~ 1kHz	DC, 15 ~ 1kHz	DC, 15 ~ 1kHz
Accuracy	0.15%	0.15%	0.15%
Resolution	0.01 Hz	0.01 Hz	0.01 Hz
Output Rating-DC			
Power	250W	500W	750W
Voltage	212V/424V	212V/424V	212V/424V
Current	2A/1A (212V/424V)	4A/2A (212V/424V)	6A/3A (212V/424V)
Programmable Output Impedance			
Range	0 Ω +200μH ~ 1 Ω +1mH		
Harmonics & Interharmonics Simulation			
Bandwidth	2400Hz	2400Hz	2400Hz
Input Rating			
Voltage Operating Range	1Ø 100~240V ± 10%V _{LN}	1Ø 100~240V ± 10%V _{LN}	1Ø 100~240V ± 10%V _{LN}
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.
Measurement			
Voltage			
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
Current			
Range (peak)	24A	48A	72A
Accuracy (RMS)	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.
Power			
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
Harmonics			
Range	2~40 orders	2~40 orders	2~40 orders
Others			
Interface	GPIO, RS-232 (Optional)		
Temperature			
Operating	0 ~ 40°C	0 ~ 40°C	0 ~ 40°C
Storage	-40 ~ +85°C	-40 ~ +85°C	-40 ~ +85°C
Safety & EMC			
CE (include EMC & LVD)			
Dimension (HxWxD)	133.35 x 482.6 x 569.5 mm / 5.25 x 19 x 22.42 inch	133.35 x 482.6 x 569.5 mm / 5.25 x 19 x 22.42 inch	133.35 x 482.6 x 569.5 mm / 5.25 x 19 x 22.42 inch
Weight	20 kg / 44.05 lbs	20 kg / 44.05 lbs	20 kg / 44.05 lbs

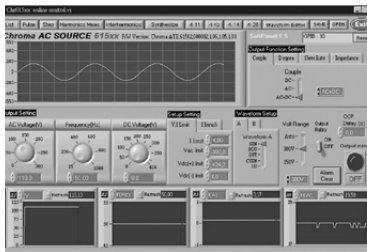
Note*1 : Maximum distortion is tested on output 125VAC (150V RANGE) and 250VAC (300V RANGE) with maximum current to linear load.

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

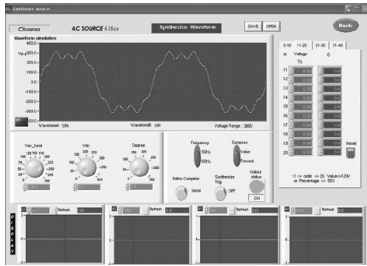
Note*3 : Model 61505 can also use single-phase connecting method of input AC power, the maximum input current is 28A @ 190V.

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

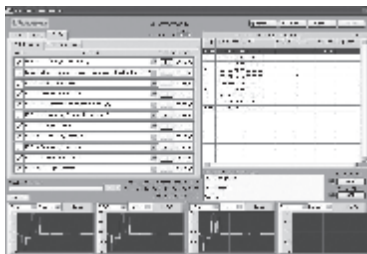
Softpanel



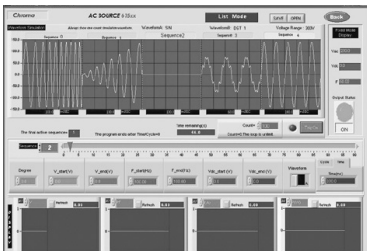
Main Operation Menu



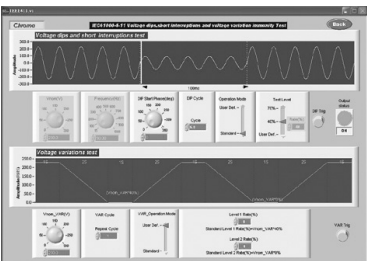
Distorted Waveform Editor



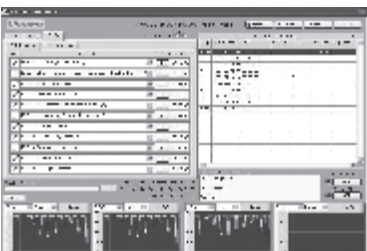
Aerospace Testing : MIL-STD-704F



Transient Voltage Programming



Voltage Dip, Short, Variation Regulation Test



Aerospace Testing : RTCA DO-160G

SPECIFICATIONS-2

Model	61504	61505
Output Phase	1	1
Output Rating -AC		
Power	2000VA	4000VA
Voltage		
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 1% @ 15-1kHz	0.3% @ 50/60Hz 1% @ 15-1kHz
Line Regulation	0.1%	0.1%
Load Regulation*2	0.2%	0.2%
Max. Current		
RMS	16A/8A (150V/300V)	32A/20A (150V/300V)
Peak	96A/48A (150V/300V)	192A/96A (150V/300V)
Frequency		
Range	DC, 15 ~ 1kHz	DC, 15 ~ 1kHz
Accuracy	0.15%	0.15%
Resolution	0.01 Hz	0.01 Hz
Output Rating-DC		
Power	1000W	2000W
Voltage	212V/424V	212V/424V
Current	8A/4A (212V/424V)	16A/8A (212V/424V)
Programmable Output Impedance	0 Ω +200μH ~ 1 Ω +1mH	
Harmonics & Interharmonics Simulation		
Bandwidth	2400Hz	2400Hz
Input Rating		
Voltage Operating Range	1Ø 100~240V ± 10%V _{LN}	3Ø 200~240V ± 10%V _{LN} *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.
Measurement		
Voltage		
Range	150V/300V	150V/300V
Accuracy	0.2%+0.2%F.S.	0.2%+0.2%F.S.
Resolution	0.1V	0.1V
Current		
Range (peak)	96A	192A
Accuracy (RMS)	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.
Power		
Accuracy	0.4%+0.4%F.S.	0.4%+0.4%F.S.
Resolution	0.1W	0.1W
Harmonics		
Range	2~40 orders	2~40 orders
Others		
Interface	GPIB, RS-232 (Optional)	
Temperature		
Operating	0 ~ 40°C	0 ~ 40°C
Storage	-40 ~ +85°C	-40 ~ +85°C
Safety & EMC	CE (include EMC & LVD)	
Dimension (HxWxD)	133.35 x 482.6 x 569.5 mm / 5.25 x 19 x 22.42 inch	266.7 x 482.6 x 569.5 mm / 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 : 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.

Video & Color
Flat Panel Display
LED/Lighting
Optical Devices
Photovoltaic Test & Automation
Automated Optical Inspection
Power Electronics
Battery Test & Automation
Passive Component
Electrical Safety
Semiconductor/IC
PXI Test & Measurement
General Purpose
Manufacturing System
Intelligent
Turnkey Test & Automation

SPECIFICATIONS-3					
Model	61509 *7	61511	61512	61511+A615103	61512+A615103
Output Phase	1 or 3 selectable				
Output Rating-AC					
Power	6kVA	12kVA	18kVA	30kVA	36kVA
Each phase	2kVA	4kVA	6 kVA	10kVA	12kVA
Voltage					
Range	0~175V/0~350V/Auto		0~150V/0~300V		
Accuracy	0.1%+0.2%F.S. *1		0.1%+0.2%F.S.		
Resolution	0.1 V				
Distortion *2	0.3% @50/60Hz, 1% @15Hz~1kHz, above 1 kHz, add 0.2%/kHz to 1%		0.3% @50/60Hz, 1%@15~1kHz, 1.5%>1kHz		
Line regulation	0.10%				
Load regulation *3	0.20%				
Temp. coefficient	0.02% per degree from 25°C				
Max Current (1-phase mode)					
RMS	60A/30A	96A / 48A	144A / 72A	240A / 120A	288A / 144A
Peak (CF=4)	240A / 120A	384A / 192A	576A / 288A	960A / 480A	1152A / 576A
Max Current (each phase in 3-phase mode)					
RMS	20A/10A	32A / 16A	48A / 24A	80A / 40A	96A / 48A
Peak (CF=4)	80A/40A	128A / 64A	192A / 96A	320A / 160A	384A / 192A
Frequency					
Range	15Hz ~ 2000Hz, 15Hz ~ 5kHz (HF option)		DC, 15-1.5kHz		
Accuracy	0.005%				
Resolution	0.01Hz (15Hz ~ 999Hz), 0.1Hz (1000Hz ~ 5000Hz)		0.01 Hz		
Phase					
Range	0 ~ 359.9°				
Resolution	0.1°		0.3°		
Accuracy	± 1°, 15Hz ~ 1kHz plus ± 1°/ kHz above 1 kHz		<0.8°@50/60Hz		
DC Output (1-phase mode)					
Power	4.5kW	6kW	9kW	15kW	18kW
Voltage	247.5V/495V	212V / 424V	212V / 424V	212V / 424V	212V / 424V
Current	45A/22.5A	48A / 24A	72A / 36A	120A / 60A	144A / 72A
DC Output (3-phase mode)					
Power	4.5kW	2kW	3kW	5kW	6kW
Voltage	247.5V/495V	212V / 424V	212V / 424V	212V / 424V	212V / 424V
Current	15A/7.5A	16A / 8A	24A / 12A	40A / 20A	48A / 24A
Input AC Power (each phase)					
AC type	3-phase, Delta or Y connecting				
Voltage Operating Range*4	3Ø 200~240V ± 10%V _{LN} (Delta: L-L, Y: L-N)				
Frequency Range	47-63 Hz				
Max. Current	23A Max./Phase	Delta: 80A Y: 70A	Delta: 120A Y: 90A	Delta: 200A Y: 160A	Delta: 240A Y: 180A
Measurement					
Voltage					
Range	0~175V/0~350V/Auto		150V / 300V		
Accuracy	0.1%RD+0.2%F.S. *1		0.1%+0.2%F.S.		
Resolution	0.1 V				
Current					
Range	120A/60A	128/32/8 A peak	192/48/12 A peak	320/80/20 A peak	384/96/24 A peak
Accuracy (RMS)	0.2% + 0.2% F.S *1		0.4% + 0.3% F.S.		
Accuracy (peak)	0.2% + 0.4% F.S *1		0.4% + 0.6% F.S.		
Resolution	0.1 A				
Power					
Accuracy	0.2%+0.4%F.S *1		0.4%+0.4% F.S		
Resolution	0.1 W				
Others					
Waveform Synthesis	50 orders @ 50/60Hz				
Harmonic Measurement	Voltage / Current 50 orders @ 50/60Hz				
Programmable Impedance	0Ω+200μH~1Ω+2mH		0Ω+200μH~1Ω+1mH		
Efficiency*5	>80%(Typical)		0.75 (Typical)		
Protect					
UVP, OCP, OPP, OTP, FAN					
Interface					
GPIB, RS-232, USB host, USB, Ethernet (standard)			GPIB, RS-232, USB, Ethernet (standard)		
Temperature					
Operating	0°C ~40°C				
Storage	-40°C~85°C				
Humidity	30%~90%				
Safety & EMC					
CE (include EMC & LVD)					
Dimension (H x W x D)	221.5 x 425 x 680 mm / 8.72 x 16.73 x 26.77 inch		1163 x 546 x 700 mm / 45.78 x 21.5 x 27.56 inch*6		1163 x 546 x 700 mm / 45.78 x 21.5 x 27.56 inch x 2 units*6
Weight	60kg / 132 lbs		229.4 kg / 505.29 lbs	242.4 kg / 533.92 lbs	480 kg / 1057.27 lbs 495 kg / 1090.31 lbs

Note*1 : Add 0.2%/kHz to FS when above 1 kHz

Note*2 : Maximum distortion is tested on output 125VAC (150V RANGE) and 250VAC (300V RANGE) with maximum current to linear load.

Note*3 : Load regulation is tested with sine wave and remote sense.

Note*4 : Models with 277V_{LN}/480V_{LL}(5 Wires) AC input voltage are available upon request.

Note*5 : Efficiency is tested on input voltage 230V.

Note*6 : Dimensions (HxWxD) with wheel sets : 1246 x 546 x 700mm / 49.05 x 21.5 x 27.56 inch.

Note*7 : Preliminary specifications