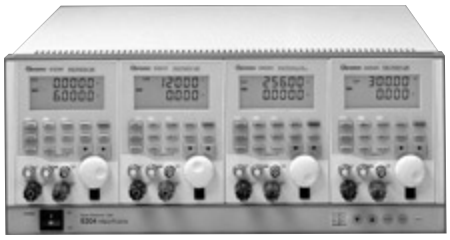
DC Electronic Load System



Smart Electronic Load
Model 6300 Series
60, 100, 250, 300W

KEY FEATURES

- Plug-in electronic load modules in selectable mainframes.
- Parallel load modules up to 2400W for high current and power application.
- Master/Slave interface for synchronizing multiple loads.
- GPIB/RS-232 Interface.
- CC, CR, CV, and CP operation modes.
- Precision loading delivers 150μA resolution.
- Minimize input resistance allowing load to sink high current at low voltage.
- Dynamic loading with speed up to 20kHz
- Real time load simulation and output measurement.
- Store up to 100 sets of front panel input Status for instant recall.
- 15 bits precision voltage and current measurement with multi-range selection.
- Remote sensing capability.
- 20MHz differential mode noise measurement.
- Short circuit test & short current measurement.

RS-232 GPIB

Chroma Model 6300 series Smart Electronic Load System is the state-of-the-art instrument for testing DC power sources and power electronic components. The system is configured by plugging the user selectable load modules into the system mainframe, and operated using the instrument front panel keypads or the remote controlled instructions via GPIB/RS-232 interface. The load modules can be programmed independently for testing multi-output DC/DC power supplies, or in parallel for testing high power application.

The 6300 family offers 4 types of modular loads with power ranging from 60 watts to 300 watts, current setting from 150μA to 60A, and voltage measurement from 0.5mV to 250V. Each load is isolated and floating, programmable in dual current ranges and measuring voltage ranges, and capable of synchronizing interface for master/slave control operation. The load can be operated in constant current, constant resistance,constant voltage, or constant power mode.

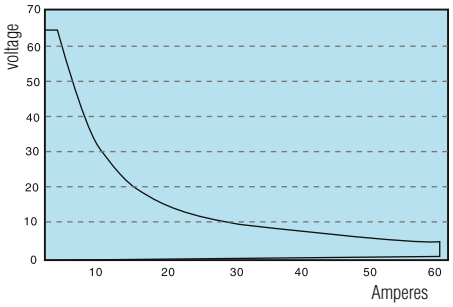
The 6300 can simulate a wide range of dynamic loading applications. The loading waveform is user programmable in slew rates, load levels, duration, and conducting voltage. The load can also be controlled via external analog control voltage, or signal generator to simulate specific application requirements. Furthermore, up to 100 sets of system operating status can be stored in battery backup SRAM and recalled instantly for automated testing application.

Real time measurement of voltage, current, and power is integrated in each 6300 load module using 15-bits precision measurement circuit. The user can perform on line voltage measurement and adjustment, or simulate short circuit test using simple front panel keypad operation. Additionally, the load module offers optional noise measurement function capable of detecting 20MHz noise via differential mode input without the need of a scope.

The 6300 has self diagnosis routine to maintain instrument performance at all time. It is also protected against OPP, OCP, OVP, OTP, and reverse polarity to guarantee quality and reliability for even the most demanding engineering testing and ATE applications.

Each load module uses current close loop design and connects all power MOSFET devices parallelly to insure high accuracy load control with minimum drift of less than 0.15% of the current setting. The FET technology accomplishes minimum input resistance and enables the load to sink high current even at very low voltage. For example, model 63030 is capable of sinking 60A at minimum 1V output, and is well suited for testing the new 3.3V low voltage power supplies. Low voltage operation, down to zero voltage is possible at correspondingly reduced current level.

MODEL 63030 INPUT CHARACTERISTICS



ORDERING INFORMATION

6301 : Mainframe for single Load module
6304 : Mainframe for 4 Load modules
63006 : Load Module 6A/60V/60W
63010 : Load Module 20A/60V/100W
63025 : Load Module 10A/250V/250W
63030 : Load Module 60A/60V/300W
A630001 : Noise Measurement (20MHz) Kit for Each Load Module
A630002 : GPIB Interface for Model 6304/6314/6334/6340 Mainframe
A630003 : RC-63 Remote Controller
A630006 : 19" Rack Mounting Kit for Model 6304 Mainframe
A600011 : Test Fixture (6 channels)
A600013 : Adapter for A600011/A600012 Test Fixture (PC standard)
A600014 : Adapter for A600011/A600012 Test Fixture (terminal block)

6304: Mainframe for 4 Load modules

6301: Mainframe for single Load module

A600011: Test Fixture (6 channels)

A630001: Noise Measurement (20MHz) Kit

A630003: RC-63 Remote Controller

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SPECIFICATIONS								
Model	**63006**		**63010**		**63025**		**63030**	
Power	20W	60W	20W	100W	25W	250W	30W	300W
Current	0~0.6A	0~6A	0~2A	0~20A	0~1A	0~10A	0~6A	0~60A
Voltage	0.9~64V (0.9~60V for CR Mode)		0.9~64V (0.9~60V for CR Mode)		1.3~256V (1.3~250V for CR Mode)		0.8~64V (0.8~60V for CR Mode)	
Min. Oper. Voltage (DC)	0.9V at 600mA	1.0V at 6A	0.9V at 2A	1.0V at 20A	1.3V at 1A	1.5V at 10A	0.8V at 6A	1.0V at 60A
Constant Current Mode								
Range	0~0.6A	0~6A	0~2A	0~20A	0~1A	0~10A	0~6A	0~60A
Resolution	0.15mA	1.5mA	0.5mA	5mA	0.25mA	2.5mA	1.5mA	15mA
Accuracy	0.1%+0.1%F.S.	0.1%+0.2%F.S.	0.1%+0.1%F.S	0.1%+0.2%F.S.	0.1%+0.1%F.S.	0.1%+0.2%F.S.	0.1%+0.1%F.S.	0.1%+0.2%F.S.
Constant Resistance Mode								
Range	0.25Ω~1kΩ (60W/16V) 10Ω~40kΩ (60W/60V)		0.075Ω~300Ω (100W/16V) 3Ω~12kΩ (100W/60V)		0.25Ω~1kΩ (250W/25V) 25Ω~100kΩ (250W/250V)		0.025Ω~100Ω (300W/16V) 1Ω~4kΩ (300W/60V)	
Resolution	12 bits		12 bits		12 bits		12 bits	
Accuracy	0.1℧ (0.25~1kΩ), 0.01℧ (10~40kΩ)		0.1℧ (0.075~300Ω), 0.01℧ (100Ω~12kΩ)		0.1℧ (0.25Ω~1kΩ), 0.01℧ (25Ω~100kΩ)		0.1℧ (0.025Ω~100Ω), 0.01℧ (1Ω~4kΩ)	
Constant Voltage Mode								
Range	1~64V		1~64V		1.5~256V		1~64V	
Resolution	16mV		16mV		64mV		16mV	
Accuracy	0.05%±0.1%F.S.		0.05%±0.1%F.S.		0.05%±0.1%F.S.		0.05%±0.1%F.S.	
Constant Power Mode								
Range	0.003~20W	0.03~60W	0.01~20W	0.1~100W	0.06~25W	0.6~250W	0.03~30W	0.3~300W
Resolution	0.3mW	3mW	1mW	10mW	2mW	20mW	3mW	30mW
Accuracy	2%F.S.	3%F.S.	2%F.S.	3%F.S.	2%F.S.	3%F.S.	2%F.S.	3%F.S.
Dynamic Mode								
Dynamic Mode	C.C. & C.R.		C.C. & C.R.		C.C. & C.R.		C.C. & C.R.	
T1&T2	0.025ms~10ms	1ms~10s	0.025ms~10ms	1ms~10s	0.025ms~10ms	1ms~10s	0.025ms~10ms	1ms~10s
Resolution	1μs	1ms	1μs	1ms	1μs	1ms	1μs	1ms
Accuracy	2%F.S.		2%F.S.		2%F.S.		2%F.S.	
Slew Rate	0.1~25mA/μs	1.0~250mA/μs	0.32~80mA/μs	3.2~800mA/μs	0.16~40mA/μs	1.6~400mA/μs	0.001~0.25A/μs	0.01~2.5A/μs
Resolution	0.1mA/μs	1.0mA/μs	0.32mA/μs	3.2mA/μs	0.16mA/μs	1.6mA/μs	0.001A/μs	0.01A/μs
Accuracy	10%±20μs		10%±20μs		10%±20μs		10%±20μs	
Min. Rise Time	15μs (typical)		15μs (typical)		15μs (typical)		15μs (typical)	
Current	0~0.6A	0~6A	0~2A	0~20A	0~1A	0~10A	0~6A	0~60A
Resolution	0.15mA	1.5mA	0.5mA	5mA	0.25mA	2.5mA	1.5mA	15mA
Accuracy	0.2%F.S.		0.2%F.S.		0.2%F.S.		0.2%F.S.	
Ext Wave Mode								
Range	0~0.6A	0~6A	0~2A	0~20A	0~1A	0~10A	0~6A	0~60A
Level	0~10V		0~10V		0~10V		0~10V	
Accuracy	0.2%F.S.	0.25%F.S.	0.2%F.S.	0.25%F.S.	0.25%F.S.	0.25%F.S.	0.2%F.S.	0.25%F.S.
Short Circuit								
Resistance	0.08Ω (max.)		0.04Ω (max.)		0.025Ω (max.)		0.016Ω (max.)	
Current	6A		20A		10A		60A	
I/P Resistance(Load Off)	100kΩ (min.) at 60V		100kΩ (min.) at 60V		300kΩ (min.) at 250V		100kΩ (min.) at 60V	
Temp. Coefficient	100PPM/℃ (typical) CC		100PPM/℃ (typical) CC		100PPM/℃ (typical) CC		100PPM/℃ (typical) CC	
Measurement Section								
Voltage Read Back								
Range	0~16V	16~64V	0~16V	16~64V	0~25.6V	25.6~256V	0~16V	16~64V
Resolution	0.5mV	2mV	0.5mV	2mV	0.8mV	8mV	0.5mV	2mV
Accuracy	0.02%+0.1%F.S.		0.02%+0.1%F.S.		0.02%+0.1%F.S.		0.02%+0.1%F.S.	
Current Read Back								
Range	0~0.6A	0~6A	0~2A	0~20A	0~1A	0~10A	0~6A	0~60A
Resolution	0.0187mA	0.1875mA	0.0625mA	0.625mA	0.0312mA	0.312mA	0.1875mA	1.875mA
Accuracy	0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.1%+0.1%F.S.		0.1%+0.1%F.S.	
Power Read Back								
Range	0~20W	20~60W	0~20W	20~100W	0~25W	25~250W	0~30W	30~300W
Resolution	0.0375mW	0.375mW	0.125mW	1.25mW	0.25mW	2.5mW	0.375mW	3.75mW
Accuracy	0.5%F.S.		0.5%F.S.		0.5%F.S.		0.5%F.S.	
General								
Dimensions (H x W x D)	143 x 104 x 443.7 mm / 5.6 x 4.1 x 17.5 inch		143 x 104 x 443.7 mm / 5.6 x 4.1 x 17.5 inch		143 x 104 x 443.7 mm / 5.6 x 4.1 x 17.5 inch		143 x 104 x 443.7 mm / 5.6 x 4.1 x 17.5 inch	
Weight	5 kg / 11 lbs		5 kg / 11 lbs		5 kg / 11 lbs		5 kg / 11 lbs	