

High Speed DC Load Model 6330 Series

KEY FEATURES

- Improve operating speeds of load for auto test system integration
- Synchronous paralleling control mode, allow Synchronous load control under static and dynamic Loading mode up to 6000W
- Up to 8 channel in one mainframe, fit for testing Multiple output SMPS.
- GPIB/RS-232 Interface
- Max Power: 200W, 100W x 2(Dual), 30W&250W,
- Max Power: 300W, 600W, 1200W
- Voltage Range: 1~80V / 2.5V~500V
- CC, CR, CV operating modes
- Dynamic loading with speed up to 20kHz
- Programmable slew rate, up to 10A/us
- Only need 1V to draw rated current
- Individual panel meters
- Real time power supplies load transient response simulation and output measurement
- 15-bit precision voltage and measurement with dual-range selection
- Remote sensing capability
- Short circuit test
- Self-test at power-on
- CE marking



Chroma Model 6330 series high speed DC electronic improves CPU clock, baud rate, parser and added synchronic parallel function for fast operation, which is ideal for auto test system integration to increase your manufacturing test throughput. Plugging the user selectable load modules into the system mainframe can also provide easy system configuration and future reconfiguration configure the system.

The 6330 family offers 8 types of modular loads with power ranging from 30 watts to 1200 watts, current from 0.5mA to 240A, and voltage measurement from 0.5mV to 500V. Each load is isolated and floating, programmable in dual current range and measuring voltage range, and capable of synchronizing with other modules for control operating. The load can be operated in constant current, constant voltage, and constant resistance.

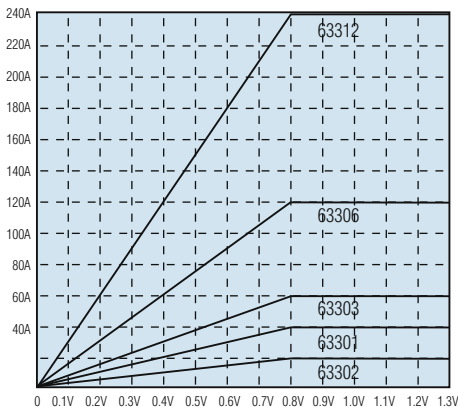
With Synchronic parallel control capability, 6330 series loads allow users to parallel and synchronize more than one load together from an internal loading control signal. This feature provides synchronic dynamic loading test for multi-output power and high power test solution.

Real time measurement of voltage, current, is integrated into each 6330 load module using a 15-bit precision measurement circuit. The user can perform on line voltage measurement and adjustment, or simulate short circuit test using the simple keypad on the front panel.

The 6330 have self-diagnosis routine to maintain instrumental performance all the 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 application.

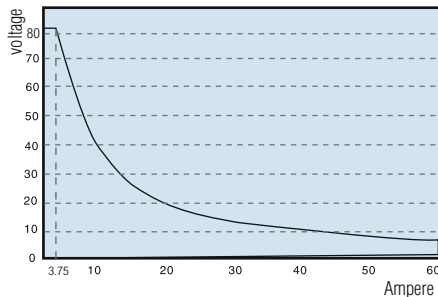
The FET technology accomplishes minimum input resistance and enables the load to sink high current even at very low voltage. For example, model 63303 is capable of sinking 60A at 1V output, and well-suited for testing the new 3V low voltage power supplies. Low voltage operation, down to zero volt, is possible at correspondingly reduced current level. (see below)

**LOW VOLTAGE CHARACTERISTICS (TYPICAL)
OF 63301/63302/63303/63306/63312**



Note: All specifications are measured at load input terminals. (Ambient Temperature of +25°C)

MODEL 63303 INPUT CHARACTERISTICS



ORDERING INFORMATION

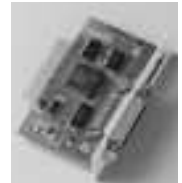
- 6332:** Mainframe for 2 Load Modules
- 6334:** Mainframe for 4 Load Modules
- 63301:** Load Module 40A/80V/200W
- 63302:** Load Module 20A/80V/100Wx2 channels
- 63303:** Load Module 60A/80V/300W
- 63305:** Load Module 10A/500V/300W
- 63306:** Load Module 120A/80V/600W
- 63307:** Load Module 5A&40A/80V/30W&250W
- 63308:** Load Module 20A/500V/600W
- 63312:** Load Module 240A/80V/1200W
- A630002:** GPIB Interface for Model 6304/6314/6334/6340 Mainframe
- A631001:** Remote Controller
- A631002:** Test Fixture
- A631004:** Softpanel for 6310/6330 series
- A632004:** Sync. Link Box for 6330/63200 Series



6330 Series High Speed DC Electronic Load Family



6334: Mainframe for 4 Load modules



A630002: GPIB Interface



6332: Mainframe for 2 Load modules



A631001: Remote Controller

SPECIFICATIONS - 1								
Model	63301		63302 (100Wx2)		63303		63305	
Power	20W	200W	20W	100W	30W	300W	30W	300W
Current	0-4A	0-40A	0-2A	0-20A	0-6A	0-60A	0-1A	0-10A
Voltage	0-80V		0-80V		0-80V		0-500V	
Min. Operation Voltage (DC)	0.5V @ 2A	0.5V @ 20A	0.5V @ 1A	0.5V @ 10A	0.5V @ 3A	0.5V @ 30A	1V @ 0.5A	1V @ 5A
	1.0V @ 4A	1.0V @ 40A	1.0V @ 2A	1.0V @ 20A	1.0V @ 6A	1.0V @ 60A	2V @ 1A	2V @ 10A
Constant Current Mode								
Range	0-4A	0-40A	0-2A	0-20A	0-6A	0-60A	0-1A	0-10A
Resolution	1mA	10mA	0.5mA	5mA	1.5mA	15mA	0.25mA	2.5mA
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	0.0375 Ω -150 Ω (200W/16V) 1.875 Ω -7.5k Ω (200W/80V)		0.075 Ω -300 Ω (100W/16V) 3.75 Ω -15k Ω (100W/80V)		0.025 Ω -100 Ω (300W/16V) 1.25 Ω -5k Ω (300W/80V)		1.25 Ω -5 Ω (300W/125V) 50 Ω -200k Ω (300W/500V)	
Resolution	12 bits		12 bits		12 bits		12 bits	
Accuracy	150 Ω : 0.1% + 0.2% 7.5k Ω : 0.01% + 0.1%		300 Ω : 0.1% + 0.2% 15k Ω : 0.01% + 0.1%		100 Ω : 0.1% + 0.2% 5k Ω : 0.01% + 0.1%		5k Ω : 20m% + 0.2% 200k Ω : 5m% + 0.1%	
Constant Voltage Mode								
Range	0-80V		0-80V		0-80V		0-500V	
Resolution	20mV		20mV		20mV		125mV	
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.	
Dynamic Mode								
Dynamic Mode	C.C. Mode		C.C. Mode		C.C. Mode		C.C. Mode	
T1 & T2	0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS		0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS		0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS		0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS	
Accuracy	1uS/1mS+100ppm		1uS/1mS+100ppm		1uS/1mS+100ppm		1uS/1mS+100ppm	
Slew Rate	0.64-160mA/μS	6.4-1600mA/μS	0.32-80mA/μS	3.2-800mA/μS	0.001-0.25A/μS	0.01-2.5A/μS	0.16-40mA/μS	1.6-400mA/μS
Resolution	0.64mA/μS	6.4mA/μS	0.32mA/μS	3.2mA/μS	0.001A/μS	0.01A/μS	0.16mA/μS	1.6mA/μS
Min. Rise Time	10μs (typical)		10μs (typical)		10μs (typical)		24μs (typical)	
Current	0-4A	0-40A	0-2A	0-20A	0-6A	0-60A	0-1A	0-10A
Resolution	1mA	10mA	0.5mA	5mA	1.5mA	15mA	0.25mA	2.5mA
Current Accuracy	0.4%F.S.		0.4%F.S.		0.4%F.S.		0.4%F.S.	
Measurement Section								
Voltage Read Back								
Range	0-16V	0-80V	0-16V	0-80V	0-16V	0-80V	0-125V	0-500V
Resolution	0.5mV	2.5mV	0.5mV	2.5mV	0.5mV	2.5mV	4mV	16mV
Accuracy	0.05% + 0.05%F.S.		0.05% + 0.05%F.S.		0.05% + 0.05%F.S.		0.05% + 0.05%F.S.	
Current Read Back								
Range	0-4A	0-40A	0-2A	0-20A	0-6A	0-60A	0-1A	0-10A
Resolution	0.125mA	1.25mA	0.0625mA	0.625mA	0.1875mA	1.875mA	0.032mA	0.320mA
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.	
Protective Section								
Over Power Protection	≅ 20.8W	≅ 208W	≅ 20.8W	≅ 104W	≅ 31.2W	≅ 312W	≅ 31.2W	≅ 312W
Over Current Protection	≅ 4.08A	≅ 40.8A	≅ 2.04A	≅ 20.4A	≅ 6.12A	≅ 61.2A	≅ 1.02A	≅ 10.2A
Over Temperature Protection	≅ 85°C		≅ 85°C		≅ 85°C		≅ 85°C	
Over Voltage Protection	≅ 81.6V		≅ 81.6V		≅ 81.6V		≅ 510V	
General								
Short Circuit								
Current	-	≅ 40A	-	≅ 20A	-	≅ 60A	-	≅ 10A
Voltage (CV)	-	0V	-	0V	-	0V	-	0V
Resistance (CR)	-	≅ 0.0375 Ω	-	≅ 0.075 Ω	-	≅ 0.025 Ω	-	≅ 1.25 Ω
Input Resistance (Load Off)	100k Ω (Typical)		100k Ω (Typical)		100k Ω (Typical)		100k Ω (Typical)	
Temperature Coefficient	100PPM/°C (Typical)		100PPM/°C (Typical)		100PPM/°C (Typical)		100PPM/°C (Typical)	
Power	Supply from 6314 Mainframe		Supply from 6314 Mainframe		Supply from 6314 Mainframe		Supply from 6314 Mainframe	
Dimensions (WxHxD)	81 x 172 x 495 mm		81 x 172 x 495 mm		81 x 172 x 495 mm		81 x 172 x 495 mm	
Weight	4.2 Kg		4.2 Kg		4.2 Kg		4.2 Kg	
Operating Range	0-40°C		0-40°C		0-40°C		0-40°C	
EMC & Safety	CE		CE		CE		CE	

• Continued on next page →

 Semiconductor
Test Equipment

 LCD Module
Test Equipment

 Video Test
Equipment

 Optical Inspection
Instruments

 Power Supply
Test Equipment

 Passive Component
Test Instruments

 Electrical Safety
Test Instruments

 General Purpose
Test Instruments

LED Test Equipment

 PXI Instruments
and Systems

SPECIFICATIONS - 2									
Model	63306		63307 (30W & 250W)			63308		63312	
Power	60W	600W	30W	30W	250W	60W	600W	120W	1200W
Current	0-12A	0-120A	0-5A	0-4A	0-40A	0-2A	0-20A	0-24A	0-240A
Voltage	0-80V		0-80V			0-500V		0-80V	
Min. Operating Voltage (DC)	0.5V @ 6A	0.5V @ 60A	0.5V @ 2.5A	0.5V @ 2A	0.5V @ 20A	1V @ 1A	1V @ 10A	0.5V @ 12A	0.5V @ 120A
	1.0V @ 12A	1.0V @ 120A	1.0V @ 5A	1.0V @ 4A	1.0V @ 40A	2V @ 2A	2V @ 20A	1.0V @ 24A	1.0V @ 240A
Constant Current Mode									
Range	0-12A	0-120A	0-5A	0-4A	0-40A	0-2A	0-20A	0-24A	0-240A
Resolution	3mA	30mA	1.25mA	1mA	10mA	0.5mA	5mA	6mA	60mA
Accuracy	0.1%+0.1%F.S.	0.1%+0.2%F.S.	0.1%+0.1%F.S.	0.1%+0.1%F.S.	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	12.5mΩ - 50Ω (600W/16V) 0.625Ω - 2.5kΩ (600W/80V)		0.3Ω - 1.2kΩ (30W/16V) 15Ω - 60kΩ (30W/80V)		0.0375Ω - 150Ω (250W/16V) 1.875Ω - 7.5kΩ (250W/80V)		0.625Ω - 2.5kΩ (600W/125V) 25Ω - 100kΩ (600W/500V)		6.25mΩ - 25Ω (1200W/16V) 0.3125Ω - 1.25kΩ (1200W/80V)
Resolution	12 bits		12 bits		12 bits		12 bits		12 bits
Accuracy	50Ω : 0.4% + 0.5%		1.2kΩ : 0.1% + 0.2%		150Ω : 0.1% + 0.2%		25kΩ : 50m% + 0.2%		25Ω : 0.8% + 0.8%
	2.5kΩ : 0.04% + 0.2%		60kΩ : 0.01% + 0.1%		7.5kΩ : 0.01% + 0.1%		100kΩ : 5m% + 0.1%		1.25kΩ : 0.08% + 0.2%
Constant Voltage Mode									
Range	0-80V		0-80V			0-500V		0-80V	
Resolution	20mV		20mV			125mV		20mV	
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.	
Dynamic Mode									
Dynamic Mode	C.C. Mode		C.C. Mode			C.C. Mode		C.C. Mode	
T1 & T2	0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS		0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS			0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS		0.025mS-10mS/Res:1uS 1mS-30S/Res:1mS	
Accuracy	1uS/1mS+100ppm		1uS/1mS+100ppm			1uS/1mS+100ppm		1uS/1mS+100ppm	
Slew Rate	0.002-0.5A/μS	0.02-5A/μS	0.8-200mA/μS	0.64-160mA/μS	64-1600mA/μS	0.32-80mA/μS	3.2-800mA/μS	0.004-1A/μS	0.04-10A/μS
Resolution	0.002A/μS	0.02A/μS	0.8mA/μS	0.64mA/μS	6.4mA/μS	0.32mA/μS	3.2mA/μS	0.004A/μS	0.04A/μS
Min. Rise Time	10μs (typical)		10μs (typical)			24μs (typical)		10μs (typical)	
Current	0-12A	0-120A	0-5A	0-4A	0-40A	0-2A	0-20A	0-24A	0-240A
Resolution	3mA	30mA	1.25mA	1mA	10mA	0.5mA	5mA	6mA	60mA
Current Accuracy	0.4%F.S.		0.4%F.S.			0.4%F.S.		0.4%F.S.	
Measurement Section									
Voltage Read Back									
Range	0-16V	0-80V	0-16V	0-80V	0-16V	0-80V	0-125V	0-500V	0-16V
Resolution	0.5mV	2.5mV	0.5mV	2.5mV	0.5mV	2.5mV	4mV	16mV	0.5mV
Accuracy	0.05% + 0.05%F.S.		0.05% + 0.05%F.S.			0.05% + 0.05%F.S.		0.05% + 0.05%F.S.	
Current Read Back									
Range	0-12A	0-120A	0-5A	0-4A	0-40A	0-12A	0-20A	0-24A	0-240A
Resolution	0.375mA	3.75mA	0.15625mA	0.125mA	1.25mA	0.375mA	0.625mA	0.75mA	7.5mA
Accuracy	0.1% + 0.1%F.S.		0.1% + 0.1%F.S.			0.1% + 0.1%F.S.		0.15% + 0.15%F.S.	
Protective Section									
Over Power Protection	≅ 62.4W	≅ 624W	≅ 31.2W	≅ 31.2W	≅ 260W	≅ 62.4W	≅ 624W	≅ 124.8W	≅ 1248W
Over Current Protection	≅ 12.24A	≅ 122.4W	≅ 5.1A	≅ 4.08A	≅ 40.8A	≅ 2.04A	≅ 20.4A	≅ 24.48A	≅ 244.8A
Over Temperature Protection	≅ 85°C		≅ 85°C			≅ 85°C		≅ 85°C	
Over Voltage Protection	≅ 81.6V		≅ 81.6V			≅ 510V		≅ 81.6V	
General									
Short Circuit									
Current	-	≅ 120A	-	-	≅ 40A	-	≅ 20A	-	≅ 240A
Voltage (CV)	-	0V	-	-	0V	-	0V	-	0V
Resistance (CR)	-	≅ 0.0125Ω	-	-	≅ 0.0375Ω	-	≅ 0.625Ω	-	≅ 0.00625Ω
Input Resistance (Load Off)	100kΩ (Typical)		100kΩ (Typical)			100kΩ (Typical)		100kΩ (Typical)	
Temperature Coefficient	100PPM/°C (Typical)		100PPM/°C (Typical)			100PPM/°C (Typical)		100PPM/°C (Typical)	
Power	Supply from 6314 Mainframe		Supply from 6314 Mainframe			Supply from 6314 Mainframe		Supply from 6314 Mainframe	
Dimensions (WxHxD)	162x172x495 mm		81 x 172 x 495 mm			162 x 172 x 495 mm		324 x 172 x 495 mm	
Weight	8.4 Kg		4.2 Kg			8.4 Kg		16.8 Kg	
Operating Range	0-40°C		0-40°C			0-40°C		0-40°C	
EMC & Safety	CE		CE			CE		CE	