Power Conversion and Electrical Safety Test
Instruments and Automated Systems
A global organization with local service

North America
Europe
Taiwan
Japan
South America Planned
North American sales and service locations

Corporate office
Foothill Ranch, CA
We deliver solutions

Power conversion and electrical safety test

- Instrumentation
- Automated test systems
- Service and support
We deliver service

Design, production and calibration capabilities

In-house design and engineering

Spacious production areas

Calibrations: in-house or on-site
Markets served

Our programmable power supplies, electronic loads, measurement instruments and automated testing systems provide solutions for many applications

- Aerospace
- Defense
- Marine
- AC-DC / DC-DC Power Supplies
- Automotive
- Medical
- Battery
- Solar
- LED / lighting
- Fuel cell
Instruments
AC power sources, DC supplies, electronic loads, power meters, thermoelectric, passive component and electrical safety testers
Instruments

AC power sources

- Up to 90KVA
- Power line disturbance simulation and AC power distortion
- Programmable output impedance
- Comprehensive measurement functions
- Harmonics, inter-harmonics Wave-shape synthesis
- Voltage dips and variation simulation
- High output current crest factor
Regenerative Grid Simulator  45kVA / 60kVA

- Full 4 quadrant, fully regenerative up to 100% of output current rating
- Specifically designed for PV inverter, Smart Grid and EV related test applications
- LIST, PULSE, STEP mode functions for testing Power Line Disturbance (PLD)
- Voltage dips, short interruption and voltage variation simulation
- Harmonics, inter-harmonics waveform synthesizer
- Programmable voltage and current limits
Instruments

DC power supplies

- Power range: Up to 15KW
- Voltage range: 0 ~ 900V
- Wider range of voltage & current within the power rating of the power supply
- Constant power operating envelop
- High-speed Programming
- Precision V&I Measurements
- Current sharing for parallel operation with Master/Slave Control
- LXI option

62000H Series High Power
Solar array simulation optional

62000B Series
N+1 redundancy / hot swappable

62000P Series
Instruments

**DC electronic loads**

- Full Loading to 0.4V
- Derated Current to 10mV
- Analog Input
- 50KHz Dynamics
- Isolated Inputs
- 0.5mA Accuracy
- Optional LED Load Modules
AC electronic loads

• Power Rating: 1800W/3600W/4500W
• Voltage Range: 50V - 350Vrms
• Current Range: Up to 45Arms
• Peak Current: Up to 135A
• Frequency Range: 45 to 440Hz, DC
• Crest Factor Range: 1.414 to 5.0
• Parallel units for higher power or synchronize for three phase operation
• Maximum paralleled power: 22.5KW single phase / 67.5KW three phase
Instruments

Power Meters

- Voltage Range: 15/30/60/150/300/600 Vrms
- Current Range: 0.005/0.02/0.05/0.2/0.5/2/5/20 Arms
- Frequency Range: DC, 15Hz~10kHz
- Embedded high speed DSP, 16 bits Analog/Digital converters
- Half rack size, 4 input modules design (66204)
- Support different wiring configuration power measurement (1P2W/1P3W/3P3W/3P4W)
- Support external shunt and CT for higher current measurement application
- 5 mA minimum current range & 0.1mW power resolution
- Meets ENERGY STAR / IEC 62301 /ErP measurement requirements
- Inrush current and energy measurement
- Voltage/ Current harmonics measurement up to 50 orders
Instruments

**TEC controller**

- Bidirectional driving with 150W (24V 8A) or 300W (27V 12 A) output
- Filtered PWM output with > 90% driving power efficiency while maintaining linear driving with current ripples < 20 mA
- Temperature reading and setting range -50 to 150°C with 0.01°C resolution and 0.3°C absolute accuracy
- Short term stability (1 hour) ±0.01°C and long term stability ±0.05°C with optimal PID control
- Feature true TEC large signal PID auto tune for best control performance
- 2 T-type thermal couple inputs, one for control feedback and the other for monitor and offset, providing versatile control modes
- RS232 serial communication port for PC remote operation and thermal data recording
- Powerful and user-friendly PC program available
- Perfect matching all Chroma designed temperature controlled platforms
Instruments

Thermal Data Logger

- 1, 8, or 64 channels on-line data recording. Multi-sets linked to a PC for hundreds of channels
- Support B, E, J, K, N, R, S, and T type thermal couples with ITS-90 defined temperature range
- Individual channel cold junction compensation with temperature resolution up to 0.01°C, error down to (0.01% of reading+0.3°C)
- Voltage full range ±480VDC, ±10VDC; resolution 1mV, 10uV; error down to (0.1% of reading+1mV), (0.015% of reading+100uV)
- 1000VDC channel to channel isolation, full protection for testing points with charge and guarantee for accurate measurements
- Thermal couple open circuit detection
- PC-based operation with powerful software for recording and analyzing data
- 1 and 8 channel models are USB powered
Electrical Safety Testers

- Hipot testers and analyzers
- Electrical safety analyzers
- Wound component testers
- Ground bond testers
- Leakage Current
- Insulation resistance
- Single and multi-channel

19032 Series
Electrical safety analyzer

19036 Series
Wound component analyzer

19050 Series
Hipot tester
Instruments

**LCR Meters**

- Test frequencies: 100Hz, 120Hz, 1kHz and 10kHz (9.6kHz) (11021) 1kHz, 10kHz, 40kHz, 50kHz (11021-L)
- Basic accuracy: 0.1% (11021), 0.2% (11021-L)
- 0.1mO~99.99 MO measurement range, 4 1/2 digits resolution
- Lower harmonic-distortion affection
- Fast measurement speed (75ms)
- Standard RS-232 interface; Optional GPIB & Handler interface
- Bin-sorting function
- Comparator and pass/fail alarming beeper function
- Text mode 40x4 matrixes LCD display
- Open/short zeroing
- On-line fireware refreshable (via RS-232)
- Input protection (1 Joule)
Automated test systems
Switching Power Supply, PV Inverter, Telecom Power Supply, DC to DC Converter, PC Power Supply, Regenerative Battery Pack, Battery Charge/Discharge, LCD Inverter/Ballast, LED Power Driver, LED Lighting, Electric Vehicle Supply Equipment (EVSE)…

+ Fixtures and Software
Automated systems

C8000 automated tester

Chroma Systems Solutions designs and supplies Automated Test Systems in Power Supply, Communication, Aerospace, and National Defense industries, as well as alternative energy markets such as Electric Vehicles, LED Driver, Solar Inverter and Panels, Fuel Cells, and Battery.

- High accuracy and repetitive measurements
- Statistical and user editable test reporting
- Remote monitoring
- PowerPro III software
Automated systems

Battery test systems

- 17011 Battery Cell Charge / Discharge Tests System
- 17020 Battery Module and Pack – Recyclable Charge / Discharge Test System
- 17030 Battery Pack – Recyclable Charge / Discharge Test System
- Battery Pro software
Automated systems

EVSE test system

- Chroma’s 8000 ATS specializing in verification of EV Supply Equipment (EVSE)
- Fully complies with SAE-J1772, CNS15511, GB/T 20234.2 test requirements
- Simulates various power grid and electric vehicle conditions
- Optimized standard test items: user only needs to confirm the test conditions and specifications
Automated systems

Safety test systems

- Sentinel I Test System - electrical safety testing to IEC60601-1, ideal for medical products with one or no patient connections or low volume production
- Sentinel II Test System - provides fully automated, complete Electrical Safety Testing to IEC60601-1
- Sentinel III Test System - provides fully automated, complete electrical safety testing to IEC60601-1 and IEC 60601-2-49 (Multifunctional Patient Monitoring Equipment). Scans patient connections for leakage current without powering down the device.
- CaptivATE software
Automated systems

**LED test system**

- Simulates the real AC test condition and environment
- Integrates AC, DC, and optical features test to one platform
- Supports DC test for AC LED
- Optionally supports dual-optical test module in one platform (Integrating sphere or average intensity)
- Supports AC / DC LIV Analysis
- Offers standard light source for calibration

58158 LED Lighting Test System
Sample test systems
Sample test systems

General Purpose DC/DC Converter

20U ATX Power Supply

35U ATX / Server Power Supply
Sample test systems

- Electric Vehicle Supply Equipment (SAE-J1772) Test System
- Solar Inverter Test System
- AC/DC High Power Test System
Sample fixtures

Low Power Fixtures and UUT

Interface Boxes and Hypertronics Connectors

Bed of Nails Test Fixture

Dual Well Test Fixture

Thermal Test Fixture

Receiver-Type Test Fixture
Test programs can be created by stacking test items in the test library.

Just populate the test conditions. The test procedure was already defined in the test item library.
Power Pro

On-line control allows for manual operator control of equipment
Power Pro

Report Generation and Statistical Analysis

Report generator

Report
Thank You

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