



OPTOELECTRONIC SOURCE MEASUREMENT SYSTEM

BURN-IN, RELIABILITY & LIFE TEST

The Chroma 58601 is a high density, precision multi SMU (Source-Measurement Unit) Module with temperature control and exchangeable interface developed for burn-in, reliability and life test of optoelectronic components including laser diodes, LEDs, OLEDs, photo-diodes and other similar components. Each module has up to 80 discrete SMUs which may be used as device drives, device biasing and/or measurement.

CURRENT SOURCES

Five power levels are offered where discrete SMUs are available to 5-amps and series device drives for 20-40-amp (preliminary) sources. Discrete voltage measurements are available for high current devices placed in series. Multiple current sources may also be paralleled (exchanging the conversion interface board) to support higher power devices.

ULTIMATE FLEXIBILITY

Chroma brings the *Conversion Kit* flexibility used in the semiconductor industry to optoelectronics. Through a Conversion Kit (conversion interface board & device carrier) the Chroma 58601 can be configured to other similar devices in minutes for:

- High Channel Density
- Higher Currents (Paralleling Channels)
- Optical Power Monitoring (Si or InGaAs stabilized detectors)
- Monitor Photodiode Measurements
- Dark Current Measurements
- Component Biasing
- Discrete Voltage Measurements (Series Drive Configuration)
- Bypass of Failing Devices (Series Drive Configuration)
- Multiple Device Types

EFFICIENT PROCESSING

- Higher temperatures reduce aging times and provide quicker results while lowering cost by requiring fewer channels.
- The high density design reduces floor space over other similar solutions.
- Batch processing is performed through device carriers. Carriers may be used between aging and characterization testing. Software tracks acquired data between all Chroma testing.
- Same base system may be used for many device types. A Conversion Kit provides quick, cost effective adaptation to prototypes and new products or variation in production.
- Fine pitch probing for aging of small sub-assemblies prior to expensive packaging.
- Hot swappable power supplies eliminate this type of failure mode while reducing MTBF / MTTR.



KEY FEATURES

- For Burn-In, Reliability and Life Testing
- Up to 800 channels
- Up to 40A per device (preliminary)
- Up to 150° C
- Batch processing via device carriers
- Conversion Kit Interface - change kit for adaption to multiple products

Chroma

SPECIFICATIONS

	Feature	Definition	Uncertainty Accuracy ± (% value + offset)	Random Uncertainty (Stability)
Devices	Component Types	Laser Diodes, LED, SLED, OLED, MPD, Photodetectors		
	Package Types	CoC, TO-Can, C-Mount, Custom		
Module	Wavelength Monitoring	390 nm - 1700 nm		
	Devices Per Module	1 to 80 each*		
	Carriers Per Module	2 each (typical)		
	Operation	Microprocessor Controlled		
	Data Sample Time	10 sec - 48 hrs		
	Internal Nonvolatile Memory	500 KB		
	Communication	Ethernet - TCP/IP		
	Change Kit Device Adaptability	Virtually Unlimited		
	User Site Calibration	With Calibration Board & DMM		
	Internal Water Leak Detectors	Yes		
Device Temperature	40° C to 150° C**			
-052 (500 mA)	500mA Current S/M Range	500.0 mA	0.1% + 100 uA	100 uA
	500mA S/M Resolution	18 uA		
	500mA Voltage S/M Range	± 5.000 V	0.1% + 1 mV	1 mV
	500mA Voltage S/M Resolution	175 uV		
-M52 (500 mA +) (-052 plus optional ranges for photodetector measurements)	Current 2 Range	2 mA	0.1% + 1 uA	400 nA
	Current 2 Resolution	70 nA		
	Current 3 Range	200 uA	0.1% + 100 nA	40 nA
	Current 3 Resolution	7 nA		
	Current 4 Range	20 uA	0.1% + 10 nA	4 nA
-013 (1 A)	Current S/M Range	1.000 A	0.1% + 200 uA	200 uA
	S/M Resolution	36 uA		
	Voltage S/M Range	± 5.000 V	0.1% + 1 mV	1 mV
	Voltage S/M Resolution	175 uV		
-053 (5 A)	Current S/M Range	5.000 A		
	S/M Resolution	180 uA		
	Voltage S/M Range	± 5.000 V		
	Voltage S/M Resolution	175 uV		
-024(20A, preliminary)	Current S/M Range	20.00 A		
	S/M Resolution	720 uA		
	Voltage S/M Range	± 40.00 V	0.1% + 8 mV	8 mV
	Voltage S/M Resolution***	1.400 mV		
-044(40A, preliminary)	Current S/M Range	40.00 A		
	S/M Resolution	1.44 mA		
	Voltage S/M Range	± 40.00 V	0.1% + 8 mV	8 mV
	Voltage S/M Resolution***	1.400 mV		
System Features	Modules Per System	1 to 10 Modules		
	Systems Per Server	1 to 4 Systems		
	System Thermal Deviation	± 5° C		
	System Internal Power	Chroma 62000B High Rel, Redundant, Hot Swappable Power Supply		
	Water Leak Shut Down	System Level (optional)		
System Requirements	Power Requirements	208 3-Phase VAC		
	or	187 to 250 VAC		
	Water Temperature	18° C to 20° C		
	Water Flow (per Module)	6 Liters/Min		
	Ambient Temperature	23° C ± 5° C		
	Ambient Relative Humidity	< 60 %RH		
	Rack Size (HxWxD)	~84" x 19" x 36"		

All specifications are subject to change without notice. Please visit our website for the most up to date specifications.

* Number of devices based on device type, measurement features and form factor.

** Device Temperature range dependent on device type and power.

*** Designed for up to 16 DUT in Series. Discrete device voltage measurement at 175 uV resolution.

Device Bypass for series configurations available for some power levels.

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