



# OPTOELECTRONIC SOURCE MEASUREMENT SYSTEM MODEL 58602

## **BURN-IN, RELIABILITY & LIFE TEST**

Chroma 58602 is a high density, precision multi Source Measurement Unit (SMU) 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 768 discrete SMUs (6 modules contain up to 4608 SMUs per System), which may be used as Device Drives, Device Biasing and/or Measurement Operations. The system's high density allows for optimized clean room space.

## **SOURCE AND MEASUREMENT**

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 Change Kit flexibility used in the semiconductor industry to optoelectronics. Through the Change Kit the 58602 can be configured to other devices in minutes for:

- High Channel Density
- Higher Currents
- Optical Power Monitoring
- Monitor Photodiode Measurements
- Dark Current Measurements
- Component Biasing
- Multiple Device Types

## **EFFICIENT PROCESSING**

- Higher temperatures reduce aging times and provide quicker results while lowering cost by requiring lower 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.
- Hot Swappable power supplies eliminate this type of failure mode while reducing MTBF / MTTR.



## **KEY FEATURES**

- Burn-In, Reliability and Life Testing
- Up to 4608 Channels
- Up to 20A per device
- Up to 150°C
- Batch processing via device carriers
- Change Kit – adapts to multiple devices

## SPECIFICATIONS

Device Specifications:					
	Feature	Definition			
Devices	Component Types	Laser Diodes, LEDs, OLEDs, SLEDs, Photodiode, MPDs			
	Package Types	CoS / CoC, TO-Can, C-Mount, Custom			
Module Specifications:					
	Range	Resolution	Uncertainty Accuracy ±(%Value + offset)	Random Uncertainty (Stability)	Max Devices Per Module / System
Wavelength	380 nm – 1700 nm				
Temperature Control (Life Test)	40°C - 150°C	0.1°C	± (2.0% + 1°C)	1°C	
Temperature Control (I-V)	30°C - 50°C	0.1°C	± (2.0% + 1°C)	1°C	
<b>58602-022</b>					<b>768 / 4608</b>
Source/Measure Voltage	0-3.00 V	175 $\mu$ V	1% + 5 mV	5 mV	
Source/Measure Current	0-250 mA*	48 $\mu$ A	1% + 480 $\mu$ A	480 $\mu$ A	
Power Measurement	0 – 250 mW	250 $\mu$ W	(20% + 500 $\mu$ W)	2500 $\mu$ W	
<b>58602-013</b>					<b>384 / 2304</b>
Source/Measure Voltage	1.50 - 4.00 V	76.3 $\mu$ V	2% + 30 mV	30 mV	
Source/Measure Current	0-1250 mA	38.3 $\mu$ A	2% + 12.5 mA	12.5 mA	
Current Pulsing	200 $\mu$ s - CW	100 $\mu$ s Rise / 10 $\mu$ s Fall (typical)	1% Overshoot	10 $\mu$ s Settling Time	
Power Measurement (CW Only)	0 – 1500 mW	5 mW	(20% + 500 $\mu$ W)	2500 $\mu$ W	
<b>58602-023</b>					<b>192 / 1152</b>
Source/Measure Voltage	1.50 - 4.00 V	76.3 $\mu$ V	2% + 30 mV	30 mV	
Source/Measure Current	0-2500 mA	76.6 $\mu$ A	2% + 25 mA	25 mA	
Current Pulsing	200 $\mu$ s - CW	100 $\mu$ s Rise / 10 $\mu$ s Fall (typical)	1% Overshoot	10 $\mu$ s Settling Time	
Power Measurement (CW Only)	0 – 2500 mW	5 mW	(20% + 500 $\mu$ W)	2500 $\mu$ W	
<b>58602-053</b>					<b>96 / 576</b>
Source/Measure Voltage	0-5.00 V	175 $\mu$ V	1% + 5 mV	5 mV	
Source/Measure Current	0-5000 mA**	180 $\mu$ A	0.1% + 2.5 mA	1.0 mA	
Power Measurement	0 – 5000 mW	5 mW	(20% + 500 $\mu$ W)	2500 $\mu$ W	
<b>58602-053S</b>					<b>960 / 5760</b>
Source/Measure Voltage	20-50.0 V	175 mV	1% + 10 mV	30 mV	Up To 20 Devices
Source/Measure Current	500 - 5000 mA**	180 $\mu$ A	2% + 2.5 mA	25 mA	In Series
Power Measurement	0- 5000 mW	5 mW	(20% + 500 $\mu$ W)	2500 $\mu$ W	
Module & System Specifications:					
	Feature	Definition	Minimum	Maximum	
Module	Carriers Per Module***		1	6	
	Data Sample Time	10 sec - 48 hrs			
	Communication	Ethernet - TCP/IP			
	Change Kit Device Adaptability	Maximizes Flexibility			
	User Site Calibration/Validation	With Validation Board & DMM			
	Internal Water Leak Detectors	Yes			
	Device Temperature ****			40°C	150°C
System	Modules Per System		1	6	
	System Per Server		1	2	
	System Thermal Deviation	5°C			
	System Internal Power	High Reliable, Redundant, Hot Swappable Power Supply			
	Water Leak Shut Down	System Level (Optional)			
System Requirements	Power Requirement *****	208 3-Phase VAC or 187 to 250 VAC			
	Water Temperature	20°C ± 2	18°C	20°C	
	Water Flow (per Module)	3 to 6 Liters/Min			
	Ambient Temperature	23°C ± 5°C			
	Ambient Relative Humidity	< 60 %RH (Non Condensing)			
	Rack Size (HxWxD)	80.5" x 23" x 44"			

\* 58602-022: 8 channels may be paralleled to source up to 2-Amps per device.

\*\* 58602-053 & -053S: 4 channels may be paralleled to source up to 20-Amps per device.

\*\*\* For discrete drive systems, Series sources vary per device power

\*\*\*\* Typical thermal control range is 40°C

\*\*\*\*\* Series drive source varies dependent on device power.

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