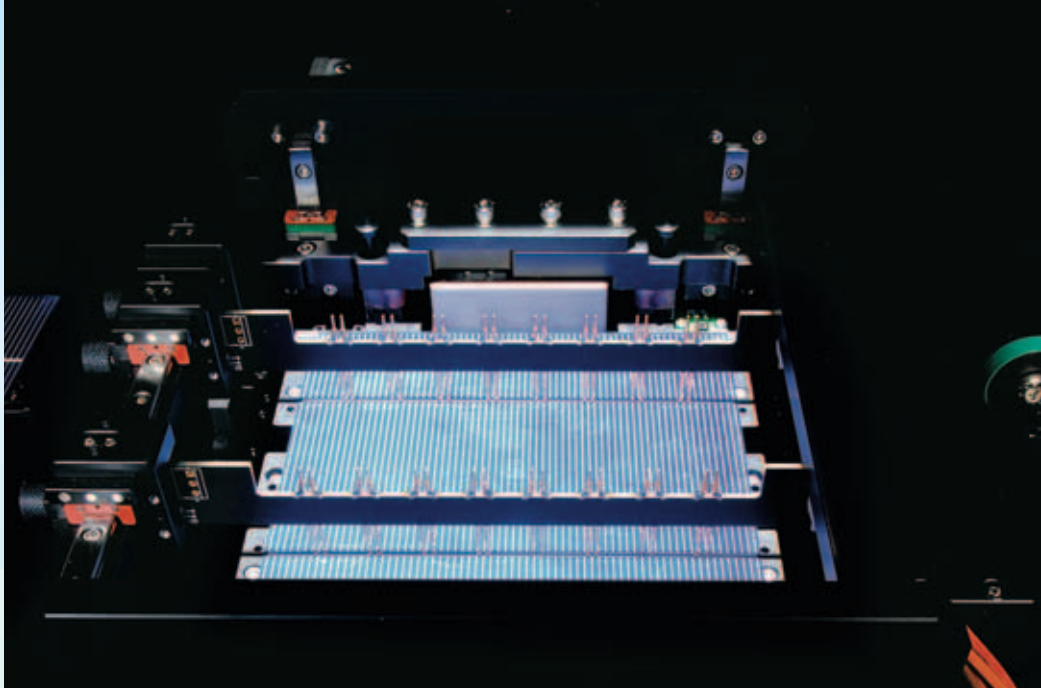




# c-SI SOLAR CELL TESTER

## MODEL 58301



I-V test is the most important test for PV cell/module manufacturing because the measured power rating or efficiency of the cell or module directly affect the selling price of the product. Therefore, highly accurate and repeatable I-V test result is not only for quality issue but also for business issue.

However, PV cell I-V testing represents several technical challenges; therefore, it's extremely hard to achieve stable and accurate test results even if class AAA type of solar simulator is used. Those challenges include:

- Spectral mismatch correction
- Minimize impact of non-uniformity
- Simultaneous measurement to avoid error caused by temporal instability of irradiance intensity
- Temperature correction or control to STC or desired temperature
- Low stress probing to avoid cell breakage
- Maximize probe-contact repeatability & minimize probing shadow

Chroma 58301 c-Si Solar Cell (Crystalline Silicon) Tester is ideal for both RD & in-line production (see Chroma 3720) application. Using Wacom® class AAA+ solar simulator, comprehensive irradiance/temperature correction technique and probing system, Chroma 58301 c-Si Solar Cell Tester achieves the highest test repeatability and measurement accuracy for most demanding customers.

### KEY FEATURES

- Measurements: Eff, Pmpp, Impp, Vmpp, Isc, Voc, FF, Rshunt, Rs, Irev.
- Full four-quadrant source for both light forward/reverse & dark forward / reverse test
- Class AAA+ solar simulator
- Versatile system software and user editable test sequences
- Low stress probe
- Patterned probe-bar to ensure minimum probe shadow
- PV cell sorter integration (Chroma 3720)



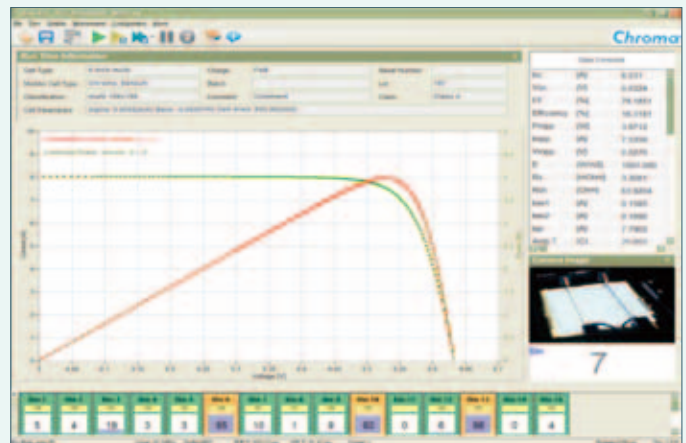
**Chroma**

## SPECIFICATIONS

Model	58301
<b>Solar Simulator Section</b>	
Lamp Type	Xenon Short Arc
Lamp Life	1,800 hrs
Illumination Area	163mm x163mm
Light Source	Steady State (w/Shutter Control)
Air Mass	AM1.5G (IEC60904-3)
Irradiation Intensity	100mW/cm <sup>2</sup> ±15% (1 Sun±15%)
Spectral Mismatch	±25% or Better
Positional Non-uniformity	2% or Better
Temporal Stability	1% or Better
Light Collimation	<5°
<b>Power Section</b>	
<b>Voltage</b>	
Voltage Forward Range	20V
V <sub>FORWARD</sub> Program Resolution	16 bits
V <sub>FORWARD</sub> Ripple	<3mVrms
Voltage Reverse Range	-20V
V <sub>REVERSE</sub> Program Resolution	16 bits
V <sub>REVERSE</sub> Ripple	<3mVrms
Transient Response Time	< 100uS
Load regulation	0.002% F.S.
Line regulation	0.002% F.S.
Slew Rate	1V/uS
<b>Current</b>	
Current Forward Range	20A
I <sub>FORWARD</sub> Program Resolution	16 bits
I <sub>FORWARD</sub> Ripple	<0.03%
Current Reverse Range	-20A
I <sub>REVERSE</sub> Program Resolution	16 bits
Transient Response Time	< 75uS
Load regulation	1mA
Line regulation	0.005% F.S.
Slew Rate	1.25A/uS
<b>Power</b>	
Power Rating	400W

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

<b>Measurement Section</b>	
<b>Voltage</b>	
Voltage Measurement Range - Forward	1V
V <sub>FORWARD</sub> Measurement Resolution	16 bits
V <sub>FORWARD</sub> Measurement Accuracy	0.05% F.S.
Measurement Points per I-V - Forward	40-200 programmable
Voltage Measurement Range - Reverse	-15V
V <sub>REVERSE</sub> Measurement Resolution	16 bits
V <sub>REVERSE</sub> Measurement Accuracy	0.05% F.S.
Measurement Points per I-V - Reverse	40-100 programmable
<b>Current</b>	
Current Measurement Range - Forward	10A/20A
I <sub>FORWARD</sub> Measurement Resolution	16 bits
I <sub>FORWARD</sub> Measurement Accuracy	0.1% F.S.
Measurement Points per I-V - Forward	40-200 programmable
Current Measurement Range - Reverse	-0.1A/-1A/-15A
I <sub>REVERSE</sub> Measurement Resolution	16 bits
I <sub>REVERSE</sub> Measurement Accuracy	0.1% F.S.
Measurement Points per I-V - Reverse	40-100 programmable
<b>Irradiance (Forward Only)</b>	
Input Range	200mV
Irradiance Measurement Resolution	16 bits
Irradiance Measurement Accuracy	500uV
Measurement Points per I-V - Forward	40-200 programmable
<b>Temperature Sensing Section</b>	
Measurement Type	IR/Thermopile
Temperature Range	0~500°C
Reproducibility	± 0.5°C



## ORDERING INFORMATION

58301 : c-Si Solar Cell Tester

Developed and Manufactured by :

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