

# LED Lighting In-line Test System (For Production)

## Model 58158-SC

The design concept of Chroma LED high speed measurement module is to combine several large size detectors and add up the luminous flux obtained by each detector to calculate the total flux of LED light. This design not only overcomes the shortcoming of previous inconvenient measurement for total flux by conventional integrating sphere, it also implements the inline test on production line. Chroma is able to provide the customer a fully automatic production line that covers both quality and productivity.

### Key Features

- ☑ Mass production application: LED lamp, LED bulb, LED bar, LED streetlight, and other luminaries
- ☑ Less error comparing to integrating sphere measurement
- ☑ High speed test and flicker measurement
- ☑ Provide standard light source for calibration which is international standard traceable
- ☑ Thermal control fixture adaptable (option)

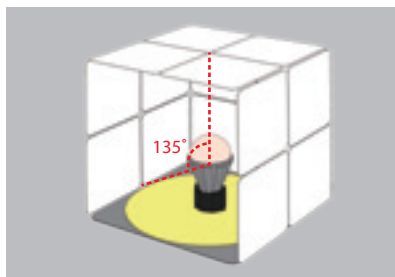
### Test Items

- ☑ Optical Power characteristics : Lm, lm/w, LED operating frequency (Flicker)
- ☑ Color characteristics : CIE<sub>x,y</sub>, Duv, CIEu'v', CCT, CRI
- ☑ Power characteristics : AC mode : Power factor (PF), I<sub>rms</sub>, V<sub>rms</sub>, THD  
DC mode : Forward voltage

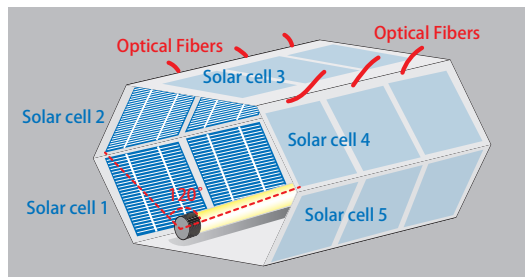


Instruments

Solar Cell Modules

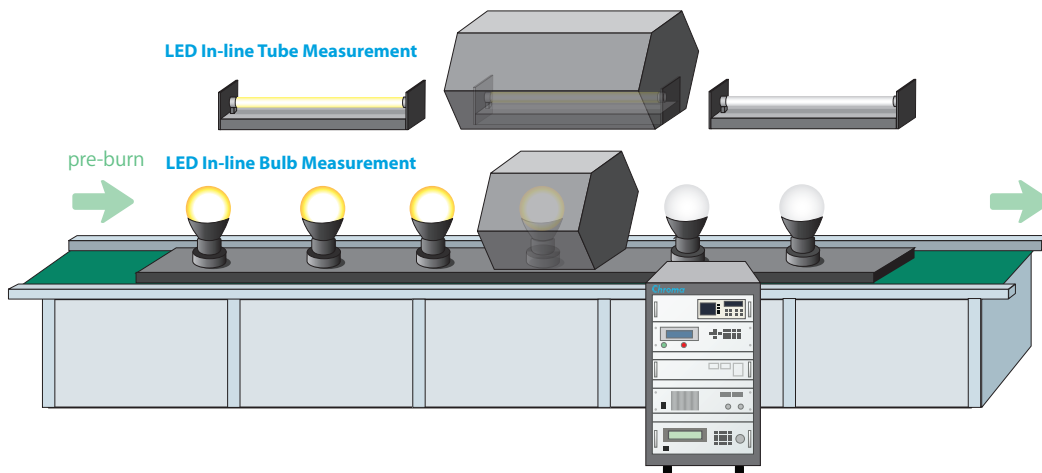


Solar Cell Module for Omnidirectional lamp



Solar Cell Module for JEL 801 LED Tube

### In-line Production Test Applications



<b>SPECIFICATIONS (25cm Integrating Sphere)</b>		
<b>Model</b>		<b>58158 -SC</b>
<b>Measurement Items</b>		
Optical Measurement Items		Lumens (lm), CIE(x,y), CIE(u,v'), CCT, CRI
Electrical Measurement Items		Frequency, Real power P, power factor PF, THD (Option), Vf (Option)
<b>Optical Measurement</b>		
Photo Detector	Wavelength Range	380~780nm
	Lumens Range *1	<5,000 lm (>5K lm optional)
Spectrometer	Detector Type	2048 Pixels Linear CCD array
	Optical Fiber Connector	SMA 905
Lumen measurement Repeatability		± 2%
CIExy Repeatability *2		± 0.001
CCT Repeatability		± 30K @ 3000K
CRI Repeatability		± 0.1
<b>Electrical AC Source</b>		
Output Rating-AC		500VA
Voltage	Range/Phase	150V/300V/Auto
	Accuracy	0.2%+0.2%F.S.
	Resolution	0.1V
	Line Regulation	0.10%
	Load Regulation	0.20%
Max.Current / Phase	RMS	4A/2A (150V/300V)
	peak	24A/12A (150V/300V)
<b>Electrical AC Meter</b>		
Power	Range (W)	1.5W~1KW (Model 66201) ; 1.5W~10KW (Model 66202)
	Power Factor Accuracy *3	0.006+(0.003/PF)KHz
Harmonic	Range	2~50 order
<b>DC Measurement (Optional)</b>		
DC Power Supply	Output Voltage	0~64V (> 64V optional)
	Output Current	0~3A (> 3A Optional)
	Ripple and Noise	1400 uVrms & 14 mVp-p / < 1mA
	Line Regulation	0.01% +4mV / 0.01% + 300 μ A
	Load Regulation	< 6mV / 0.01% + 300 μ A
	Program Accuracy	0.02% + 10mV / 0.01%+1mA
Read back Accuracy		0.02% + 10mV / 0.01%+1mA
<b>Others</b>		
Dimension (H x W x D)		1081 x 532 x 700 mm
Weight		100k g
Power Consumption		300 W
Operating		100~240V VAC 50/60HZ
<b>Software Support DC Source</b>		
Chroma 6200P-300-8, Chroma 11200 (650V), Chroma 11200 (800V), Keithley 24XX Series		

**Notes #1:** 10inch Integrating Sphere without ND filter. Chroma also offers 12 and 20 inch integrating sphere for higher

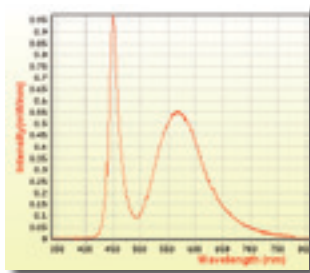
**Notes #2:** The unit under test is 10W halogen lamp

**Notes #3:** The PF spec. applies only when the signals are higher then 50% of the selected voltage and current ranges

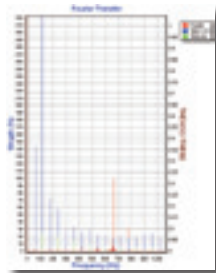
### Analysis Tools



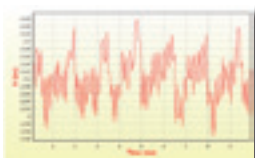
Power Analysis :  
Im, Im/W, PF, Power



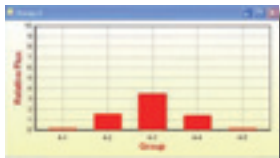
LED Spectrum Analysis :  
CCT, CRI, Duv



THD Analysis



Flicker Analysis



Flicker Analysis

