# LED Lighting Test System for Production Line

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, 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
☑ AC/DC LIV analysis software on board
☑ Provide standard light source for calibration which is international standard traceable
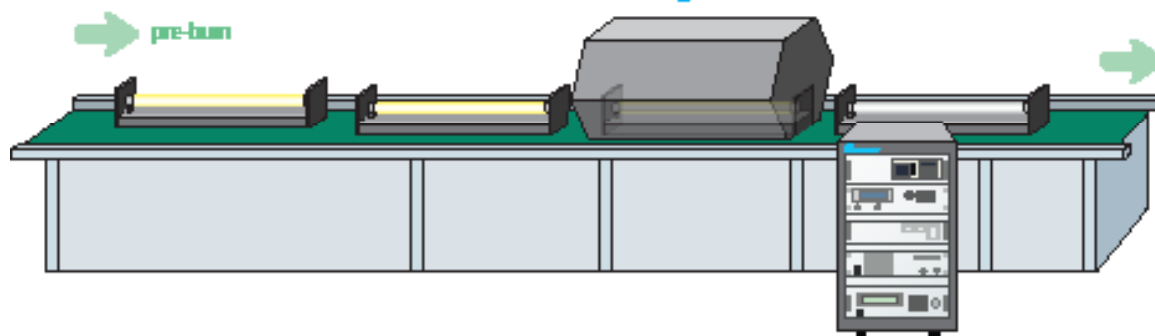☑ Thermal control fixture adaptable (option)
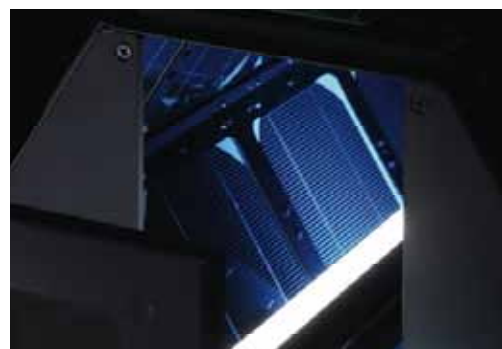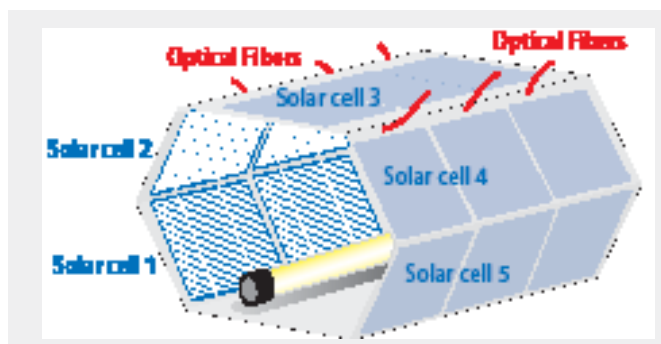
Solar Cell Box

In-line Production Test Applications

LED In-line Bulb Measurement

pre-burn

T8/T5 In-line Light Bar Measurement

pre-burn

SPECIFICATION

Measurement Items

Optical Measurement Items	Lumens (lm), mW, Wp, Wd, FWHM, CIE(x,y), CIE(u',v'), CCT, CRI
Electrical Measurement Items	Vdc, Idc, Vrms, Vpeak+, Vpeak-, Irms, Irms+, Irms-, Inrush current, Frequency, Real power P, reactive power VAR, apparent power VA, power factor PF, energy, THD (current and voltage), Vf, If

Optical Measurement

Photo Detector	Wavelength Range	380~780nm
	Lumens Range *1	2000 lm(>2000 lm Option)
Spectrometer	Detector Type	2048 Pixels Linear CCD array
	Wavelength Range	380~780nm
	Slit	100um
	Resolution(FWHM)	3.8nm
	Integration Time	1.2ms~ 10sec
	Dynamic Range (Single scan)	2×10^8
	Fiber Optic Connector	SMA 905

Electrical AC Source

Output Rating-AC		500VA~36KVA
Voltage	Range/Phase	150V/300V/Auto
	Accuracy	0.2%+0.2%F.S.
	Resolution	0.1V
	Distortion	0.3%@50/60Hz 1%, 15~1KHz (Typical)
	Line Regulation	0.10%
	Load Regulation	0.20%
Max.Current /Phase	r.m.s	32A/20A (150V/300V)
	peak	192A/96A (150V/300V)
Frequency	Range/Phase	DC, 15~1KHz
	Accuracy	0.15%
Harmonic-Inter Harmonic Stimulaton	Bandwidth	2400Hz
Others	Dimension(HxWxD)	1081x532x700 mm
	Weight	100kg
	Power Consumption	300W
	Operating	100~240V VAC 50/60HZ

Software Support DC Sources	Chroma 52958, Chroma 6200P-300-8, Chroma 11200(650V), Chroma 11200(800V), Keithley 24XX Series

Electrical AC Meter

AC Voltage	Range	150/300/500Vrmx (CF=1.6)
	Accuracy	0.1%+0.05%*KHZ of rdg + 0.08% of rng
	Imput Resistance	1M
AC Current	Range	SHUNT H : 0.2/2/8/20Arms (CF=2 @ 0.2/2/8A, CF=4 @ 20A) SHUNT L : 0.01/0.1/0.4/2Arms (CF=4)
	Accuracy *2	SHUNT H : (0.1%+0.05%*KHz) of rdg + 0.12%rdg SHUNT L & 20A : (0.1%+0.05%*KHz) of rdg + 0.25% rng
Power	Range(W)	1.5W~10KW, 24 ranges
	Accuracy *3	SHUNT H : [0.2% + 0.1%*KHz + (0.3/PF)%*KHz] of rdg + 0.2% of rdg SHUNT L & 20A : [0.2% + 0.1%*KHz + (0.3/PF)%*KHz] of rdg + 0.33% of rdg 300V x 0.01A Range : 0.2%of rdg + 7mW
	Power Factor accuracy *4	0.006 + (0.003 / PF) KHz
Harmonic	Range	2~50 order

Notes *1: Base on 60cm T8/T5 light bar test fixture. Total power test fixtures will be different by luminaires
Notes *2: The current accuracy applies temperature range 23±1℃ for 0.01A&0.2A(CF=2). For all the other current range, the spec. applied under 23±5℃
Notes *3: The 300Vx0.01A range is usually used to test No-load condition of UUT
Notes *4: The PF spec. applies only when the signals are higher then 50% of the selected voltage and current ranges.
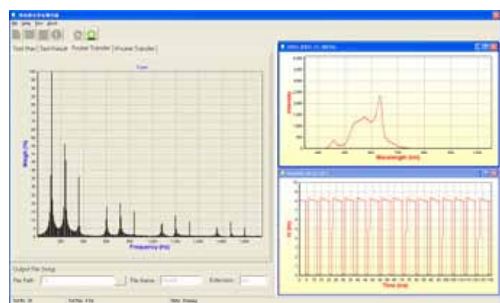
THD, Flicker & Wavelength Measurement

Luminaires Optical Power Distribution Analysis