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: CIExy, Duv, CIEu'v', CCT, CRI
- Power characteristics: AC mode: Power factor (PF), Irms, Vrms, THD
  DC mode: Forward voltage

**In-line Production Test Applications**
- LED In-line Tube Measurement
- LED In-line Bulb Measurement
- In-line Production Test Applications
**SPECIFICATIONS (25cm Integrating Sphere)**

**Model**

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**Optical Measurement**

- Photo Detector
  - Wavelength Range: 380~780nm
- Lumens Range: <5,000 lm (>5K lm optional)
- Spectrometer
  - Detector Type: 2048 Pixels Linear CCD array
- Optical Fiber Connector: SMA 905
- Lumen measurement Repeatability: ±2%
- CIE(x,y) Repeatability: ±0.001
- CCT Repeatability: ±30K @ 3000K
- CRI Repeatability: ±0.1

**Electrical AC Source**

- Output Rating-AC: 500VA
- 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: 4A/2A (150V/300V)
  - peak: 24A/12A (150V/300V)

**Electrical AC Meter**

- Power: 1.5W~1KW (Model 66201); 1.5W~10KW (Model 66202)
- Power Factor Accuracy: 0.006+(0.003/PF) KHz
- Harmonic Range: 2~50 order

**DC Measurement (Optional)**

- 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% + 300μA
- Load Regulation: <6mV / 0.01% + 300μA
- Program Accuracy: 0.02% + 10mV / 0.01%+1mA
- Read back Accuracy: 0.02% + 10mV / 0.01%+1mA

**Others**

- Dimension (H x W x D): 1081 x 532 x 700 mm
- Weight: 100kg
- Power Consumption: 300W
- Operating: 100~240V VAC 50/60Hz

**Software Support DC Source**

- 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
2. The unit under test is 10W halogen lamp
3. The PF spec. applies only when the signals are higher then 50% of the selected voltage and current ranges

**Analysis Tools**

- Power Analysis:
  - lm, lm/W, PF, Power
- LED Spectrum Analysis:
  - CCT, CRI, Duv
- THD Analysis
- Flicker Analysis