

AOS-3000 Series Integrating Sphere Measurement System

(1)Introduction

AOS-3000 System meets the following standards: CIE NO.127, CIENO.15, SJ / T 2355, GB / T 7922-2003, GB / T 8417-1987 and others, uses the international advanced full-spectrum method to measure the spectral power distribution of samples of various LED, includes x,y chromaticity coordinates, CCT, CRI(color rendering index), color tolerance, variation, purity, dominant wavelength, luminous flux, radiant power, luminous efficacy and other parameters. Corresponding voltage, current, power, power factor and other parameters can be also measured by applied corresponding meters.

Test and data processing software has both language of English and T/S Chinese, also can calculate and print all measurement parameters. Data and analysis results can be PDF and other formats reports.

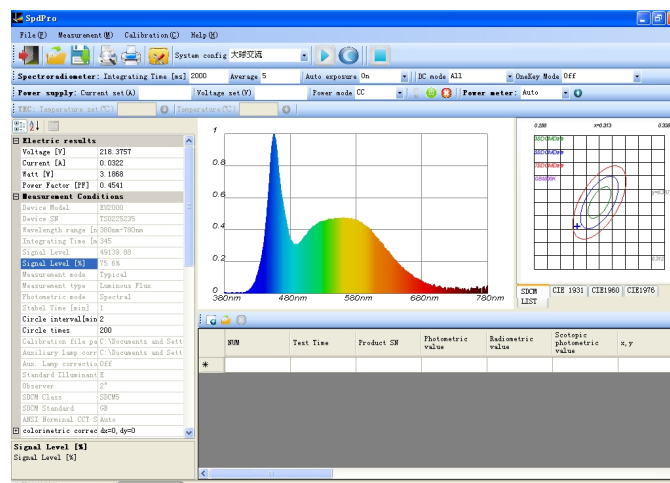
Advantages

- (1) Integrated design, to provide professional, standardized and efficient integration services;
- (2) Using the most accurate spectroscopic measurements: fast CCD spectrometer with high precision, measurement in milliseconds;
- (3) Totally solution: equipped with 1.5m/1.75m/2m sphere, covering all kinds of sources and lamps test; equipped with auxiliary-lamp to test self-absorption value;
- (4) Automatism Design : scaling to support one-step calibration, and one-step measure;
- (5) Advanced technology, the sphere is made by the spinning , no butt joints, to ensure higher accurate;
- (6) Optional : High reliable industrial machine

The Whole System:



The Software Interface:



(2) The Composition:

AOS-3000 SERIES SYSTEM

System Model	Sphere Size	Sphere Model	Optional item
AOS-3000-150	1.5m	MSPA-1500	No.4 in the following table
AOS-3000-175	1.75m	MSPA-1750	
AOS-3000-200	2.0m	MSPA-2000	

Item No.	Product Name	Product No.	Description	Features
1	Spectrometer	SW2000	Tests photometric, color and electrical performance of light sources (380~780nm)	Fast CCD sampling
2	Optical Fiber	1.2m	Transmits optical signal between the sphere and spectrometer	Connects sphere & spectrometer
3	Calibration Lamp	24V/50W	Calibrates color temperature and luminous flux (large sphere)	OSRAM
4	Integrating Sphere (optional)	MSPA-1500/1750/2000	providing a clean test environment, avoiding light pollution and loss 1.5M/1.75M/2M Aluminium alloy	Fixtures E27/T5/T8; auxiliary lamp 24V/50W
5	Digital Power Meter	UI2008	Monitors voltage, current, power and power factor while testing optical parameters	Communication type
6	AC Power Source	APS5000A	Provides stable working conditions for the DUT	Applied to be used at laboratory
7	DC Power Source	DS6005DS	Precision DC for single LED, LED lamp and calibration lamp	Laboratory & production (60V/5A)
8	Software	V2.1	English and T/S Chinese	Free
9	Computer	/	Connects the matched instruments	Software pre-configured, ready to use

(3) Specifications:

1. SW2000 Spectrometer 1 pcs

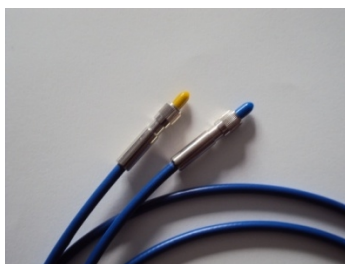


SW2000 adopts high-sensitivity silicon photodiode array sensors manufactured by Hamamatsu, Japan, which feature high-sensitivity response in the ultraviolet band. Equipped with a Cerny-Turner optical platform, the SW2000 can effectively suppress stray light, delivering high sensitivity, high dynamic range and high-speed measurement with measurement time down to the microsecond level.

Grating	600 lines	600 lines	600 lines	1200 lines	1200 lines	1200 lines
Slit Width	100μm	50μm	25μm	100μm	50μm	25μm
Wavelength Bandwidth (FWHM)	2.5nm	1.2nm	0.7nm	1.2nm	0.6nm	0.3nm
Wavelength Resolution	0.3nm			0.125nm		
Wavelength Range	Tunable range: 200nm-1100nm, single unit wavelength coverage: 550nm			Tunable range: 200nm-1100nm, single unit wavelength coverage: 250nm		
Detector	Hamamatsu linear image sensor					
Spectral Sampling Interval	1nm					

Grating	600 lines	600 lines	600 lines	1200 lines	1200 lines	1200 lines
Signal-to-Noise Ratio	600:1					
Stray Light	<0.1% (at 600nm)					
Integration Time	56μs~5s, 100μs step					
AD Resolution	16 bit					
Communication Interface	USB2.0					
Fiber Connector	SMA905					
Dimensions	118mm * 112mm * 50mm					

2. Optical Fiber 1.2m 1pcs



Optical Fiber is used to connect the spectroradiometer and the integrating sphere for Optical Signal Transmission

3. Calibration Lamp (24V/50W) 1pcs

Provides reliable calibrations for spectral irradiance and spectral intensity systems.

NIST Traceable Calibration.

National Institute of Metrology P.R.China Traceable Calibration.



4. 1.5M/1.75M/2M Integrating Sphere 1pcs

Advanced technology, the sphere is made by the spinning, no butt joints, to ensure higher accurate;The internal surface is coated with BaSO₄.

1. Inner Diameter is 1.5m/1.75m/2m, made of Aluminium alloy
2. Reflectance Value at VIS range is $\geq 96\%$
3. Applied to measure LED, bar-shaped light, panel light, etc
4. Two hemispheres are independent, easy to install and disassemble.
5. The standard lamp holder: E27、T5、T8



5. UI2008 Digital Power Meter(BASIC MODEL) 1pcs



Measure item	Vrms, Irms, W, PF
Voltage range	10~600V
Current range	0.005~20.00A
Basic accuracy	$\pm (0.4\% \text{reading} + 0.1\% \text{range} + 1 \text{digit})$
Communication interface	RS232
Power supply	100 ~ 240 V AC, 50/60 Hz

7. APS5000A AC Power Source 1pcs



Model		4000A	4000B	4000C	5000A	5001A	5002A	5003A	5005A
Capacity		350VA	700VA	1200VA	500VA	1KVA	2KVA	3KVA	5KVA
Circuit mode		IGBT/SPWM							
Input		Single phase 110V/220V±10%, 47-63Hz							
Output									
Phase		Single phase							
Voltage		Low range 1.00V-150.00V / High range 1.00V-300.00V							
Frequency		45-250Hz, step 0.1Hz							
Max. current	Low range	3A	6A	10A	4.2A	8.4A	16.8A	25A	42A
	High range	1.5A	3A	5A	2.1A	4.2A	8.4A	12.5A	21A
Load regulation		≤1%							
Line regulation		≤1%							
Harmonic distortion		≤2% (resistive load, L=120V, H=240V)							
Frequency stability		≤0.01%							
Crest factor		1.41±0.10							
Efficiency		≥75%							
Response time		Max. 20ms							
Frequency resolution		0.01Hz							
Voltage resolution		0.01V							
Current resolution		0.001A							
Power resolution		4 digits LED, resolution 0.001W /0.001kW							
Power factor resolution		3 digits LED, resolution 0.01							
Measuring accuracy	Voltage	±0.5%full scale +5 digit							
	Current	±0.5%full scale +5 digit							
	Frequency	±0.01%full scale +5 digit							
	Power	±0.5%full scale +5 digit							
Setting accuracy	Voltage	±1%full scale							
	Frequency	±0.1%full scale							
Communication interface		N/A			RS232				
Preset function		Preset output voltage, output frequency							
Fast key function		Fast key for 110V / 220V, 50Hz /60Hz							
Alarm function		Audible and visual alarm once protective activated; display error code on LED							
Protection		Fast-response circuit to detect over current, over load, over temperature and short circuit; Output will be shut down in protection mode.							
Cooling		Cooling fan							
Operation environment		0°C-40°C, ≤90% RH(Non-condensing), Altitude: 2000 feet							
Dimension (mm)		365Wx145Hx450D			430Wx133xH480D		430Wx222Hx480D		
Weight (kg)		13.5	16	20	20	25	30	50	80

7. DS6005DS DC Power Source**1pcs**

Parameter		DS6005DS
Input Voltage		110V AC $\pm$ 10% 50Hz $\pm$ 2% or 220V AC $\pm$ 10% 50Hz $\pm$ 2%
Input Power		300VA
Output rating	Voltage	0~60V
	Current	0~5A
Source effect $\pm$ % of Output+offset	Voltage	CV $\leq$ 0.01%+3mV
	Current	CC $\leq$ 0.05%+5mA
Load effect $\pm$ % of Output+offset	Voltage	CV $\leq$ 0.01%+3mV
	Current	CC $\leq$ 0.05%+5mA
Setting accuracy@25°C $\pm$ % of Output+offset	Voltage	$\leq$ 0.1%+10mV
	Current	$\leq$ 0.1%+10mA
Measurement resolution	Voltage	10mV, 1mV
	Current	10mA, 1mA
Measurement accuracy@25°C $\pm$ % of Output+offset	Voltage	$\leq$ 0.05%+5mV
	Current	$\leq$ 0.05%+5mA
Measurement speed	Voltage	160ms/ones
	Current	160ms/ones
Ripple and Noise 20~20MHz	Voltage	$\leq$ 1mVrms/3mV (P-P)
	Current	$\leq$ 0.05%+5mA
Temperature index@0~40°C $\pm$ % of Output+offset	Voltage	$\leq$ 0.05%+10mV
	Current	$\leq$ 0.1%+10mA

8. Computer 1pcs



OS	WIN10
SCREEN	24"
SSD	256G
MEMO	8G
ACCESSORY	Keyboard&mouse
REMARK	Software inside

Contact Us



Shanghai Mate Optronics Co., Ltd.

©Mob: 86-18149763393

©Mail: mt@mateoptronics.com

©Adress: No. 281-289, Lixin Road, Fengxian District, Shanghai, China

©Web: www.mateoptronics.com