

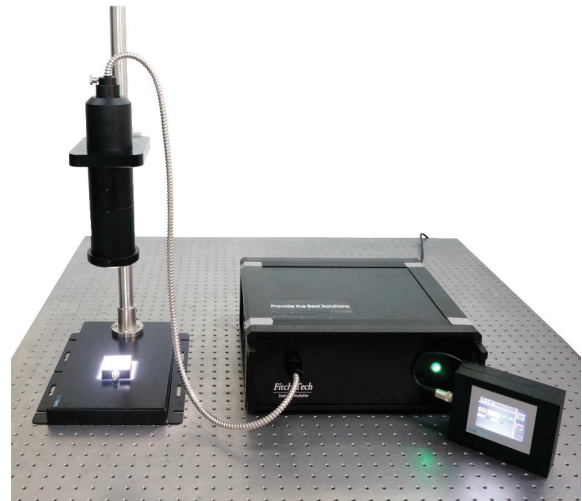
3. Class AAA Solar Simulator w/t Fiber Guide, Collimation Angle 5 degree

ESS-F5-3A

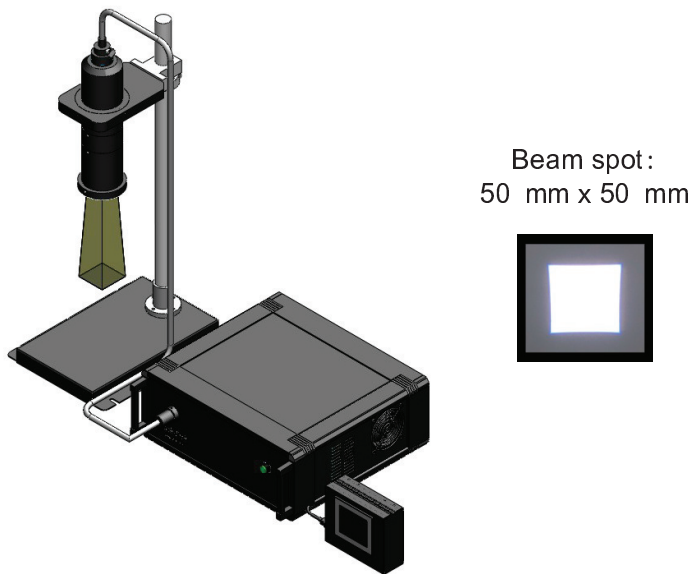
AAA 50 x 50 mm² Solar Simulator

Class AAA ESS-F5-3A Solar Simulator is designed in accordance with the standards of IEC 60904-9 and

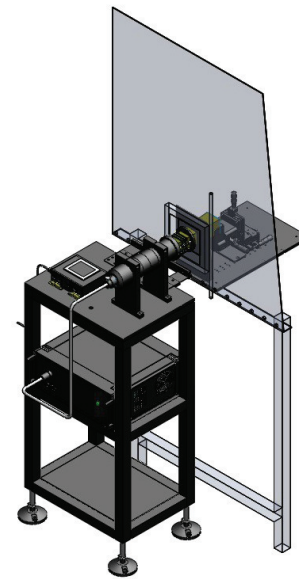
ASTM E927 to measure the efficiency for solar cells, of which the output beam size is 50 x 50 mm². The optical fiber light guide enables the flexible illumination and also can be integrated into a glove box, which can exactly match your research needs. SS-F5-3A can measure the current values from 0.1 mA to 1 A when equipped with the source meter, it is applicable to any kind of solar cells measurements.



Graph 1. Custom light guide– downward



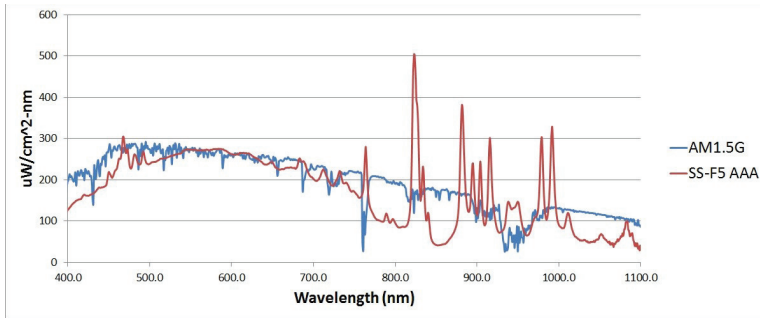
Graph 2. Custom light guide-parallel



In compliance with IEC60904-9 standards:

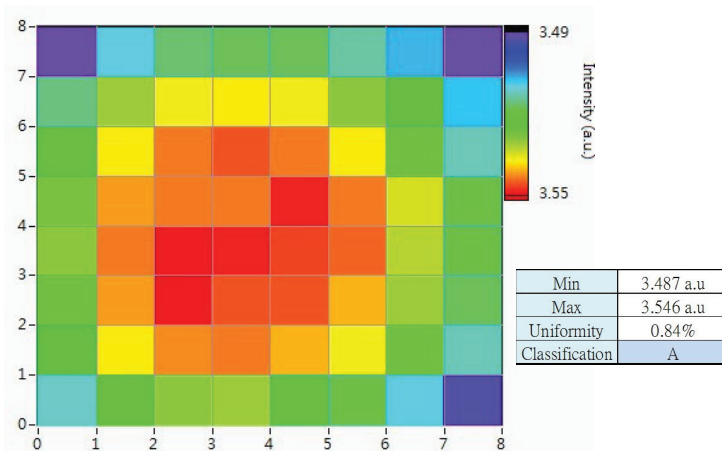
IEC60904-9 characteristic	A class	SS-F5-3A rate
Spectral Match	0.75-1.25	A
Non-Uniformity of Irradiance	2%	A
Temporal Instability	2%	A

Graph 1. Spectral Match: SS-F5-3A is compliance with IEC60904-9 class A definition

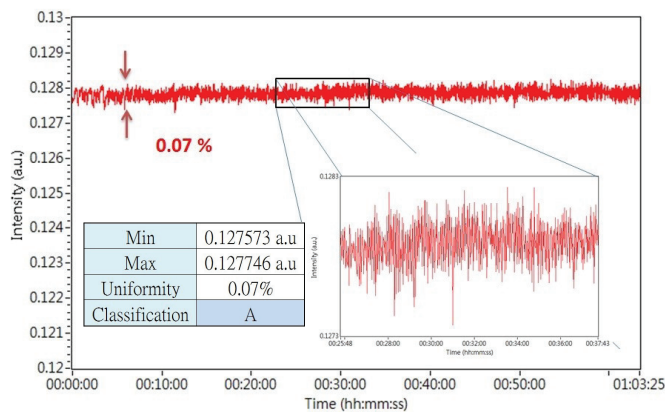


Wavelength	SS-F5 AAA	AM1.5G	Ratio	Classification
400 - 500 nm	16.74%	18.40%	0.91	A
500 - 600 nm	21.69%	19.90%	1.09	A
600 - 700 nm	19.87%	18.40%	1.08	A
700 - 800 nm	13.56%	14.90%	0.91	A
800 - 900 nm	11.63%	12.50%	0.93	A
900 - 1100 nm	16.38%	15.90%	1.03	A

Graph 2. Non-uniformity of irradiance: SS-F5-3A is compliance with IEC60904-9 class A definition



Graph 3. Temporal instability: SS-F5-3A is compliance with IEC 60904-9 class A definition



Standard Specifications

Standard	Specifications
Beam Spot	50 mm x 50 mm
Spectral Match	AM1.5G, < ± 25%, A class
Non-Uniformity of Irradiance	< ± 2%, A class
Temporal Instability	< ± 2%, A class
Optical Fiber Light Guide	Light uniform system and light source system separation design
Light Source	300 W Xenon
Wavelength Range	400 nm ~ 1100 nm
Light Intensity	Up to 1000 W/m ² @AM1.5G (± 10% lamp power control)
Recommended Environment	<ul style="list-style-type: none"> Supply Voltage: 100-240V Temperature: 20 ~ 40 °C Humidity: < 80%
Others	<ul style="list-style-type: none"> Delayed shutdown air cooling system LCD Touch-screen monitor: lamp hours/ lamp power control (± 10%)/ light source with shutter control The power supply has a stability better than 1% Light source with shutter

Recommended Supporting Options

Reference Cell	<ul style="list-style-type: none"> 2 cm x 2 cm silicon solar cell Standard lemon interface Pt sensor
IV tracer software	<ul style="list-style-type: none"> Measurement time-delay setting function Quick-note function Semi-log IV display Reference cell measurement and correction Mismatch-factor IV correction
Sample Stage	<ul style="list-style-type: none"> 4-wire holder Channel switch design Light source bracket height adjustable
Source Meter	Keithley 2400 source meter
Glove Box Application	<ul style="list-style-type: none"> Upward optical path Sample stage for glove box
Light Intensity Adjustment	<ul style="list-style-type: none"> Adjustable in light intensity from 0 % to 100 % Weak light measurement
Sealed sample box	<ul style="list-style-type: none"> Complete sealing design which can avoid sample attenuation. Multi-stage switch, standard BNC connector.
Test Report	Third party test report