

## Applications

- Semiconductor characterization
- Photovoltaic Solar Cell Testing
- UV Exposure Testing
- Sunscreen Testing
- Cosmetics Testing
- Environmental Testing
- Electrochemical

## Features

- Economical Design
- Up to Class AAA Specification
- Touchscreen Power Supply
- Turn Key Operation
- Collimated Systems Available
- Manual Shutter Included
- Electronic Shutter Optional
- Multiple Optional Accessories
- Lamp Life Timer
- Air Mass AM0 /AM1.5 Filters

# SF SOLAR SIMULATOR

## Small Area Collimated Lens Based Class AAA and ABA

# SF Solar Simulator

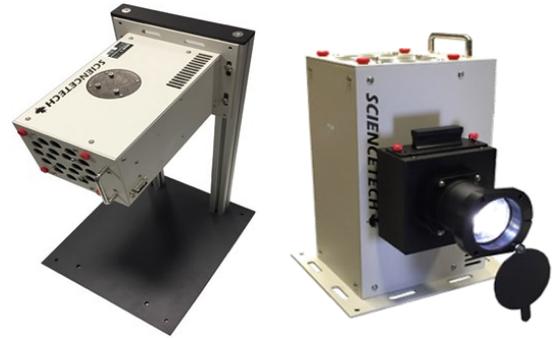
## OVERVIEW

Sciencetech’s SF Solar Simulators (Steady State) are low cost lens based systems designed for researchers who do not require a large field of illumination. SF series solar simulators produce 1 Sun and are available in Class A or B uniformity.

The beam can be projected horizontally (standard) or vertically with the use of a beam turner or downward-facing stand.

Sciencetech SF series solar simulators produce a highly collimated output and are an ideal choice for space based research or systems needed high levels of collimation.

Sciencetech SF type Solar Simulators include an arc lamp housing, 1 Xe arc lamp, touchscreen power supply with igniter, filter holder, and testing report.



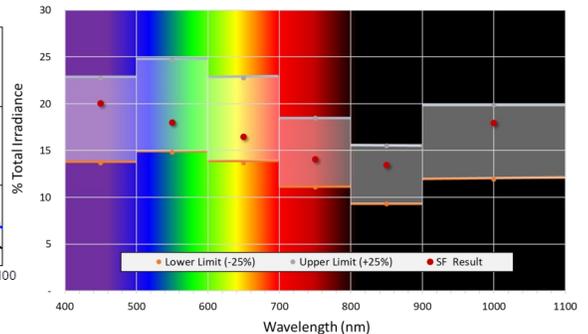
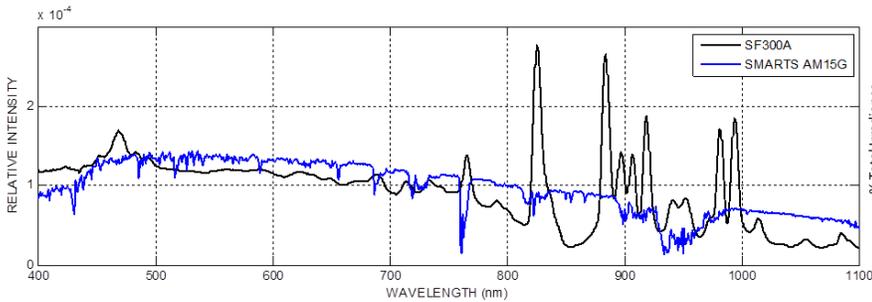
Vertical Output with downward facing stand

Horizontal Output

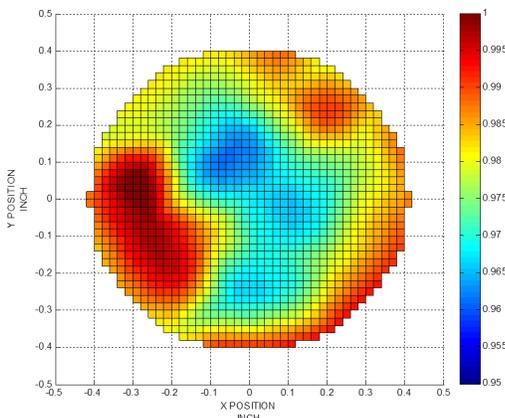
### Standards for Class AAA Specifications

Sciencetech’s solar simulator specifications listed are according to ASTM E927 standards, unless otherwise stated. Please contact us if you are interested in matching IEC 60904-9(2007), JISC 8912-1998, or other standards. We can accommodate testing to match several standards.

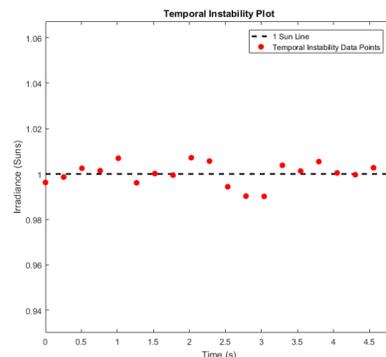
**Class A. Spectral Match.** Solar simulator spectrum meet with ASTM AM1.5G solar spectrum for each wavelength



**Class A. Non Uniformity of SF300A over 1" Diameter** less than 2%



**Class A. Temporal Instability of Irradiance.** Less than 2% LTI.



# SF Solar Simulator

## SPECIFICATIONS

### SF Series Models

Model	SF300A	SF150B	SF300B
Part Number	160-9008	160-9002	160-9011
Solar Simulator Classification	AAA	ABA	ABA
Spectral Range (nm)	250-2000		
Spectral Match Classification	A		
Spatial non-uniformity	< 2%	< 5%	<5%
Non-Uniformity Class	A	B	B
Temporal Stability Classification	A		
Target Diameter (mm)	25	25	50
Working Distance (mm)	100-130		
Working Distance (mm) (With Beam Turning Option)	40-50		
Collimation	1.0 degree half angle		
Power Level at Target (AM1.5G Standard — 100mW/cm <sup>2</sup> )	1 Sun		
Center Beam Line Height (mm)	137		
Lamp Power (W)	300	150	300
Power Supply Model	601-300	601-150	601-300
Dimensions (LxWxH) (mm)	305 x 205 x 276		
Weight (kg) Without power supply	6		
Power Supply Input	110-240V, 50Hz/60Hz, 250W	110-240V, 50Hz/60Hz, 450W	
Output Power (W)	180-300	100-150	100-150
Operating Current (A)	5-20	5-12	5-20
Stability / Ripple / Regulation	0.05% / < 1% / 0.02% current variation for 5V line charge		

Sciencetech's low cost line of SF solar simulators include a filter box which can hold a range of filters in Sciencetech's standard SF style filter holder. The most popular options are AM filters; however, a range of other filter options are available.

**AM0 Filter** reproduce extra-terrestrial solar spectrum, used for space applications.

**AM1.5 Global** simulates the global total radiation solar on the ground when the sun is at 48.2° zenith angle. It includes both direct light from the sun and the diffuse light that is scattered by the atmosphere.

**AM1.5 Direct.** Reproduce the direct radiation spectrum on the ground at 48.2° zenith angle.

### Sciencetech's Filters

Model	Description
160-8023	Air Mass AM1.5G Filter for SF Series (Standard Range)
160-8025	Air Mass AM1.5D Filter for SF Series (Standard Range)
160-8019	Air Mass AM0 Filter for SF only Series Sola (Standard Range)
100-8048	(WF-1Q) Compact IR water Filter, 1.75 " with Quartz Windows



[Browse Solar Filters](#)



[Browse all Filtering Options](#)

# SF Solar Simulator

## CONFIGURATION

### Power Supply

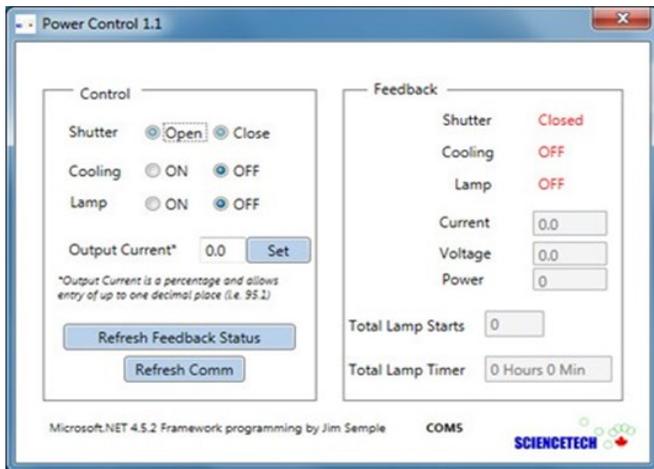
Sciencetech’s 601 – series power supplies are the included power supplies for use with Sciencetech’s SF series lamp houses.

**Standard features** included with Sciencetech’s 601– series power supplies:

- Touchscreen interface
- Shutter and exposure control (if electronic shutter is supplied\*)
- Single connection for lamp power, cooling, and communication
- Lamp starts and timer log
- Fan cooling safety interlock
- RS232 software GUI included shown below



LAMP ON	LAMP OFF	T	21	87.0
		FANS On		88.0
0.0	V	FANS Ou		SET
0.0	I	FANS OFF		
0.00	LOG			SHUTTER



CLOSE	SHUTTER	OPEN/CLOSE TIME		EX-POSE
		2	2	
STOP LAMP		0	0	LOOP
		MAIN	RUNTIME	HELP

### Optional Upgrades

To be added to sales order as optional upgrades:

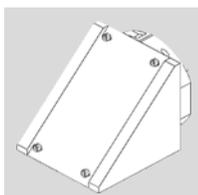
- Temperature monitor
- Optical feedback
- Auto lamp starting

Contact a Sciencetech Technical Sales Representative to discuss your custom requirements!

# SF Solar Simulator

## ACCESSORIES

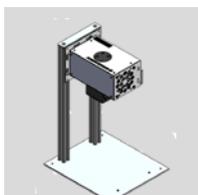
Sciencetech manufactures modular spectroscopy and solar simulation equipment. The SF type simulators are based on Sciencetech's compact LH series lamp house; due to this modular design philosophy, there are a number of available options for SF style solar simulators from Sciencetech's catalog of instrument accessories.



### Beam Turning (160-9005)

---

Beam turning accessory for SF type solar simulators. The beam turning accessory can be rotated 360 degrees offering a wide range of simulator arrangements.



### Stand (100-8052)

---

Downward facing stand for LH series lamp houses.



### Automated Shutter 2" (127-9005)

---

Computer controlled shutter for LH series lamp houses (works with SF series solar simulators).



### High speed Shutter (165-8033)

---

High speed shutter for SF solar simulators.



### IV tester (175-9103)

---

20W. Current Voltage Measurement system (IV Tester) for Continuous Solar Simulators.



### Dark safety glasses (720-0159)

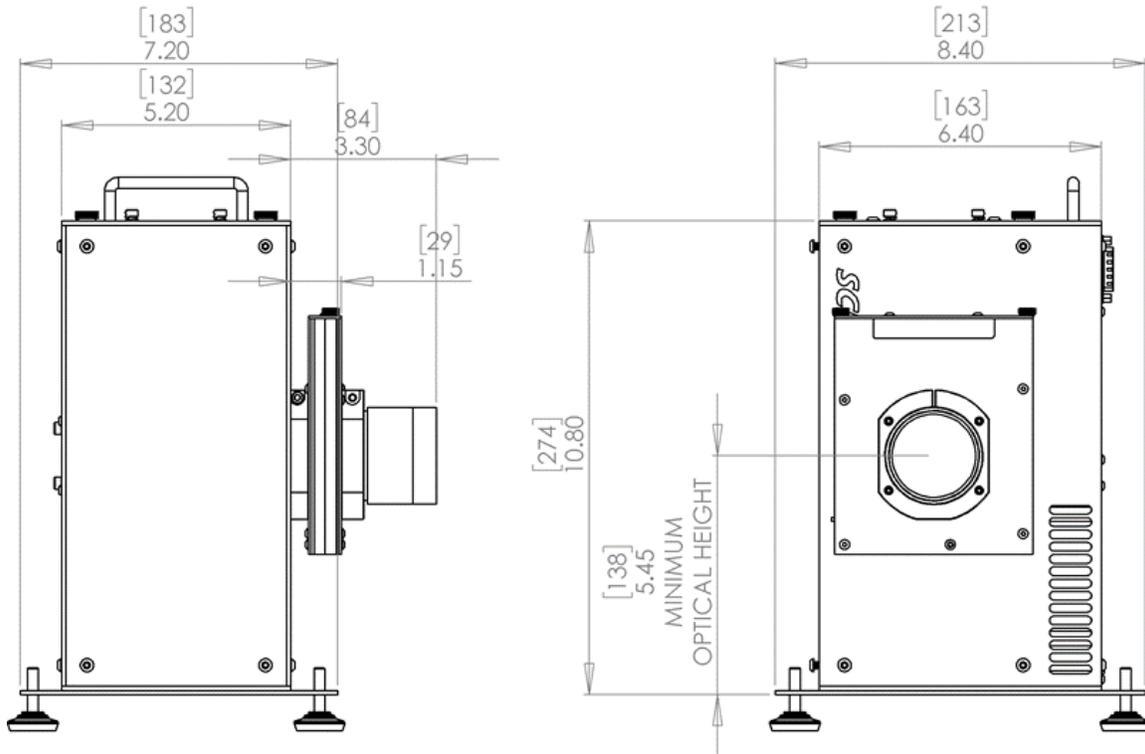
---

UV Dark safety glasses.

# SF Solar Simulator

## DIMENSIONS

Dimensions are in [mm].



OVERALL H x W x L	165.1 x 182.9 x 271.8 mm
WEIGHT	5 kg
OPTICAL HEIGHT	68.6 mm or 80-100 mm
MOUNTING OPTIONS	1/4-20 leveling feet — M6-M8 through holes — 76.2 mm spacing