www.sciencetech-inc.com sales@sciencetech-inc.com (519) 644 0135 (Canada)

SCIENCETECH
Making Light Work Better

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

Version 3.1 Nov 2023

SF Solar Simulator

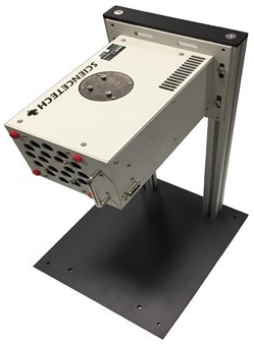
OVERVIEW

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.

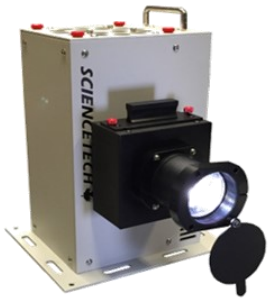
The beam can be projected horizontally (standard) or vertically with the use of a beam turner or downward-facing stand.

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

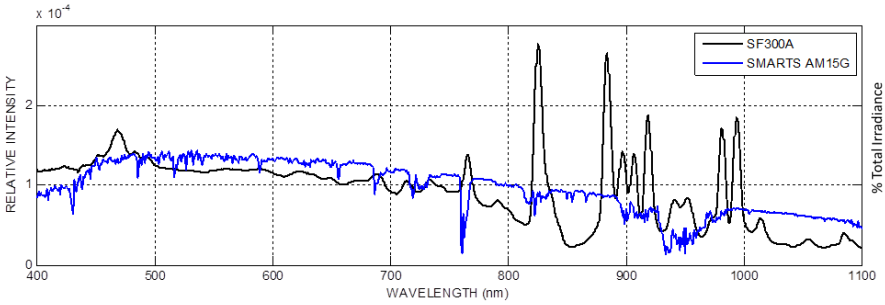


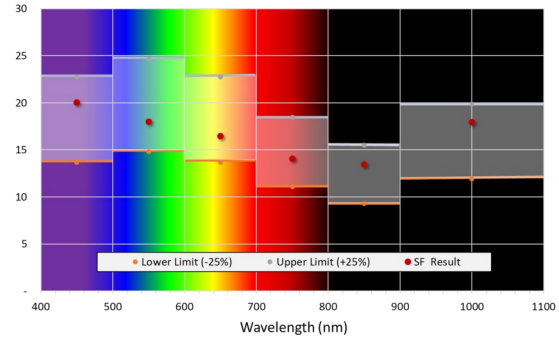
Horizontal Output

Standards for Class AAA Specifications

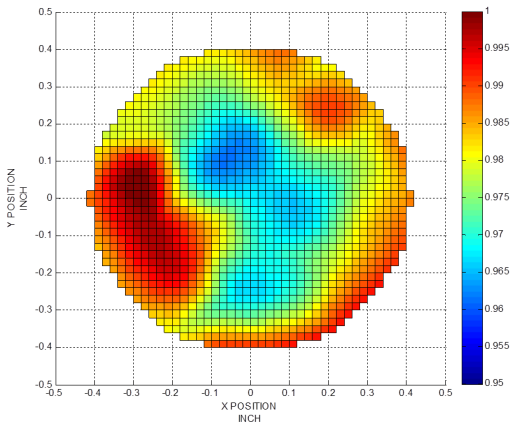
Sciencetech's solar simulator specifications listed are according to ASTM E927 standards, unless otherwise stated. Please contact us if you are interested in matching IEC 60904-9 (2007), JISC 8912-1998, or other standards. We can accommodate testing to match several standards.

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

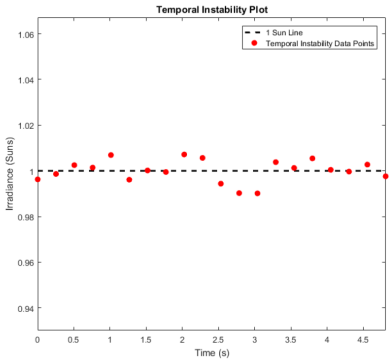




Class A. Non Uniformity of **SF300A** over 1" Diameter less than 2%



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



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SF Solar Simulator

SPECIFICATIONS

SF Series Models

Model Part Number	SF300A 160-9008	SF150B 160-9002	SF300B 160-9011
Solar Simulator Classification	AAA	ABA	ABA
Spectral Range (nm)	250-2000		
Spectral Match Classification	A		
Spatial non-uniformity Non-Uniformity Class	< 2% A	< 5% B	<5% 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/cm²)	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
160-8090	(AMF-AM1.5G) Air Mass AM1.5G Filter for SF Series
160-8091	(AMF-AM1.5D) Air Mass AM1.5D Filter for SF Series
160-8092	(AMF-AM0) Air Mass AM0 Filter for SF Series
100-8048	(WF-1Q) Compact IR water Filter, 1.75 '' with Quartz Windows

Browse Solar Filters

Browse all Filtering Options

SF Solar Simulator

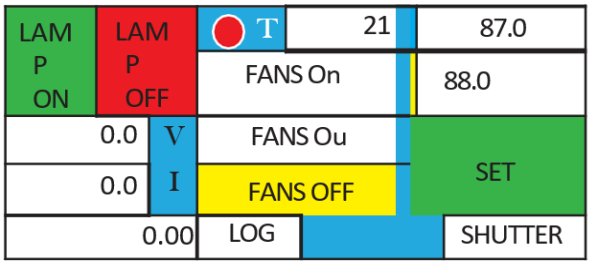
CONFIGURATION

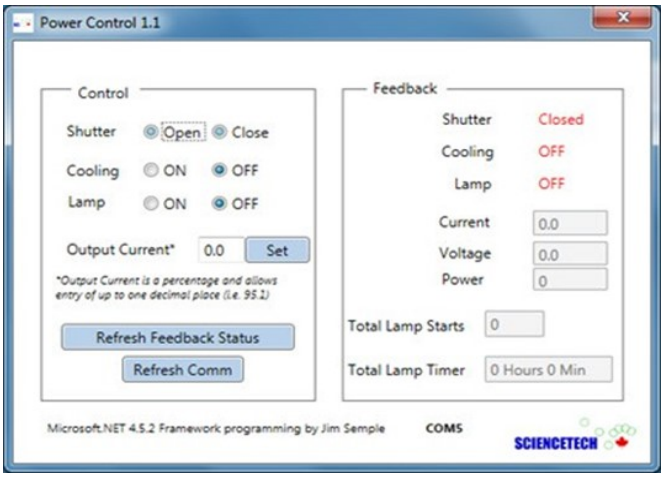
Power Supply

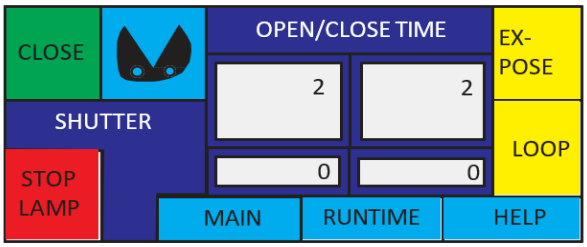
Sciencetech's 601 – series power supplies are the included power supplies for use with Sciencetech's SF series lamp houses.

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







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!

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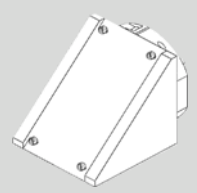
SF Solar Simulator

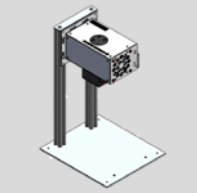
ACCESSORIES

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.

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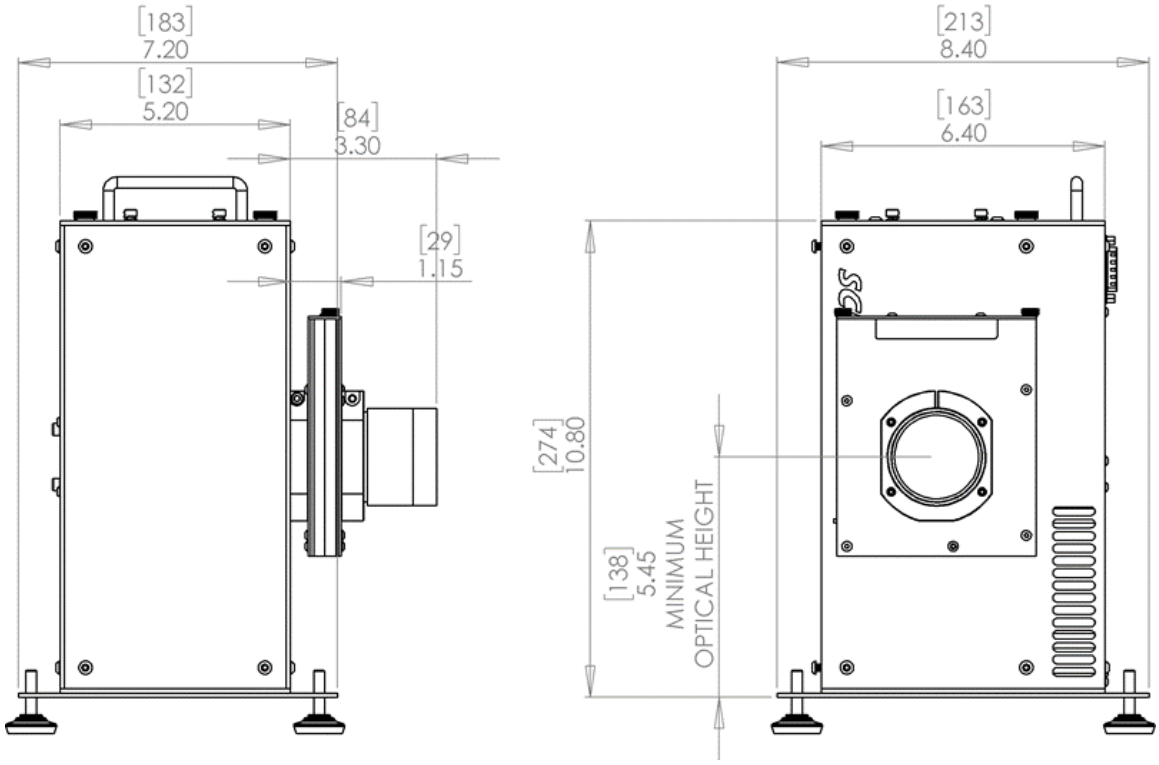
SF Solar Simulator

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