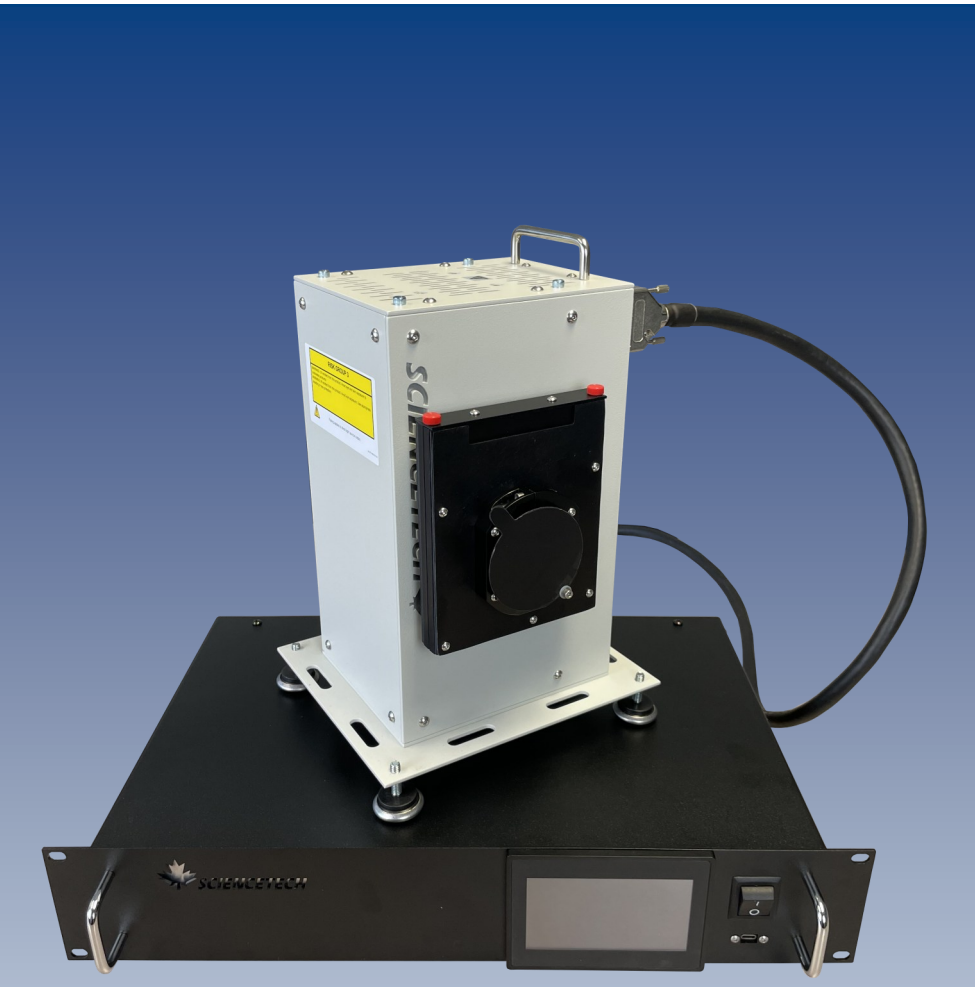
www.sciencetech-inc.com sales@sciencetech-inc.com (519) 644 0135 (Canada)

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 3.3 May 2025

SF Solar Simulator

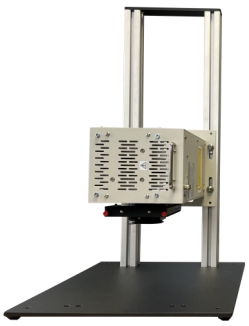
OVERVIEW

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 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 hevels of collimation.

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



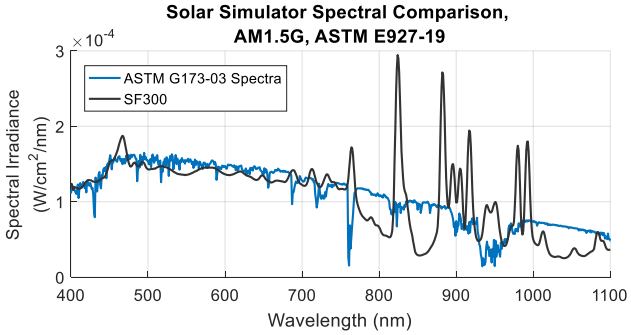
Vertical output with downward facing stand

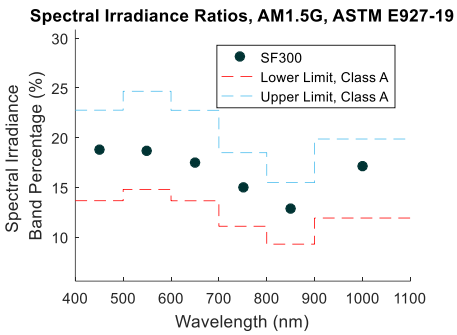
Horizontal output

Standards for Class AAA Specifications

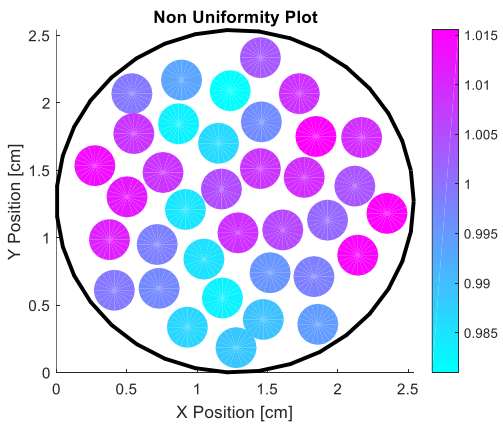
Sciencetech's solar simulator specifications listed are according to ASTM E927 standards, unless otherwise stated. Please contact us if you are interested in matching IEC 60904-9 (2007), JISC 8912-1998, or other standards. We can accommodate testing to match several standards.

Class A. Spectral Match. Solar simulator spectrum meet with ASTM AM1.5G and AM0 solar spectrum.

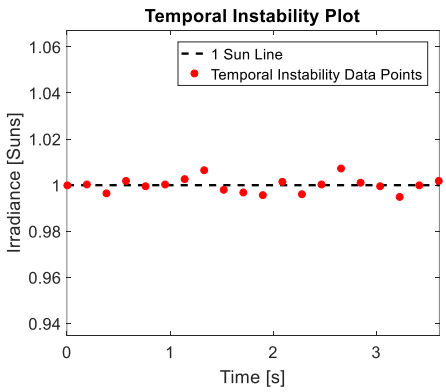




Class A. Non Uniformity of SF300A over 1" Diameter less than 2%



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



SF Solar Simulator

SPECIFICATIONS

SF Series Models

Model Part Number	SF 300	 150
Solar Simulator Classification	AAA to UBA	ABA to UBA
Spectral Range (nm)	250-2000	
Spectral Match Classification[1]	Up to A	
Spatial non-uniformity Non-Uniformity Class	< 2% A	< 5% B
Temporal Stability Classification	A	
Target Diameter (mm)	25 to 50	50
Working Distance (mm)	100-130	
Collimation	1.0 degree half angle[2]	
Power Level at Target (AM1.5G Standard — 100mW/cm²)	1 Sun	
Center Beam Line Height (mm)	137	
Lamp Power (W)	300	150
Power Supply Model	601-300	601-150
Dimensions (LxWxH) (mm)	222 x 183 x 318	
Weight (kg) (with power supply)	6 (12)	
Power Supply Input	110-240V, 50Hz/60Hz , 450W	
Operating Current (A)	5-20	
Stability / Ripple / Regulation	0.05% / < 1% / 0.02% current variation for 5V line charge	

1. Filter required for spectral match classification
2. >70% power within specification

Browse Solar Filters

Sciencetech's low cost line of SF solar simulators include a filter box which can hold a range of filters in Sciencetech's standard FT 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. AM0 spectral match only.

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 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 all Filtering Options

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SF Solar Simulator

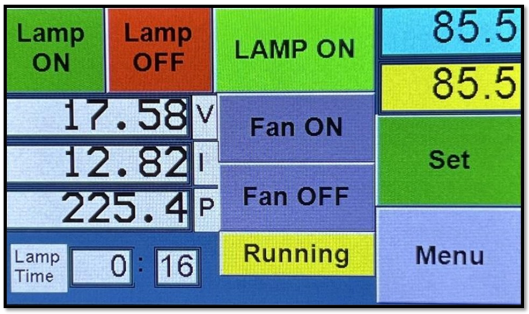
CONFIGURATION

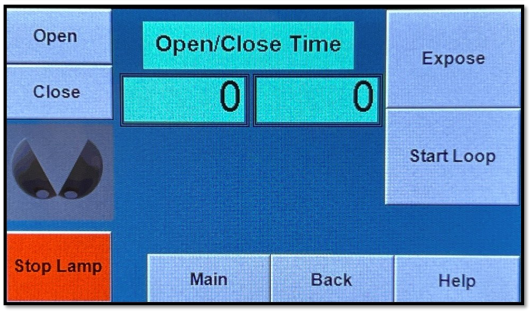
Power Supply

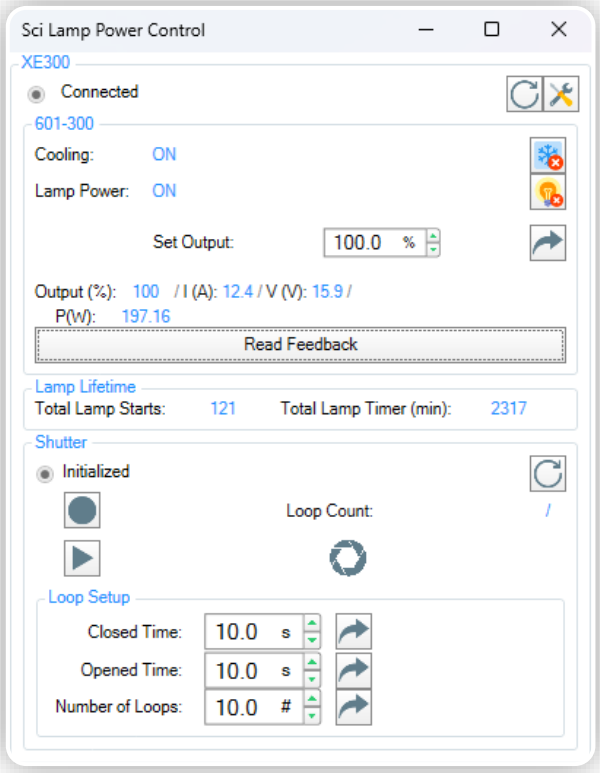
Sciencetech's 601 – series power supplies are the included power supplies for use with Sciencetech's SF series lamp houses.

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:

- Optical feedback
- Auto lamp starting

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

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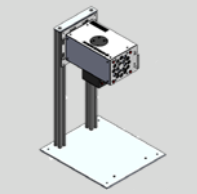
SF Solar Simulator

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.



Stand (101-8015)

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).

Solar Reference Cell (125-9060)

This solar reference cell consists of a 20 × 20 mm monocrystalline silicon photovoltaic cell encased in a 92 × 70 × 16 mm metal enclosure with a protective quartz window and a temperature sensor. Options are available for calibration by Sciencetech, or by ISO/IEC 17025 accredited lab. For ISO/IEC 17025 accredited lab calibrated cells, calibration is traceable to NIST and NREL.

IV tester (175-9120)

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

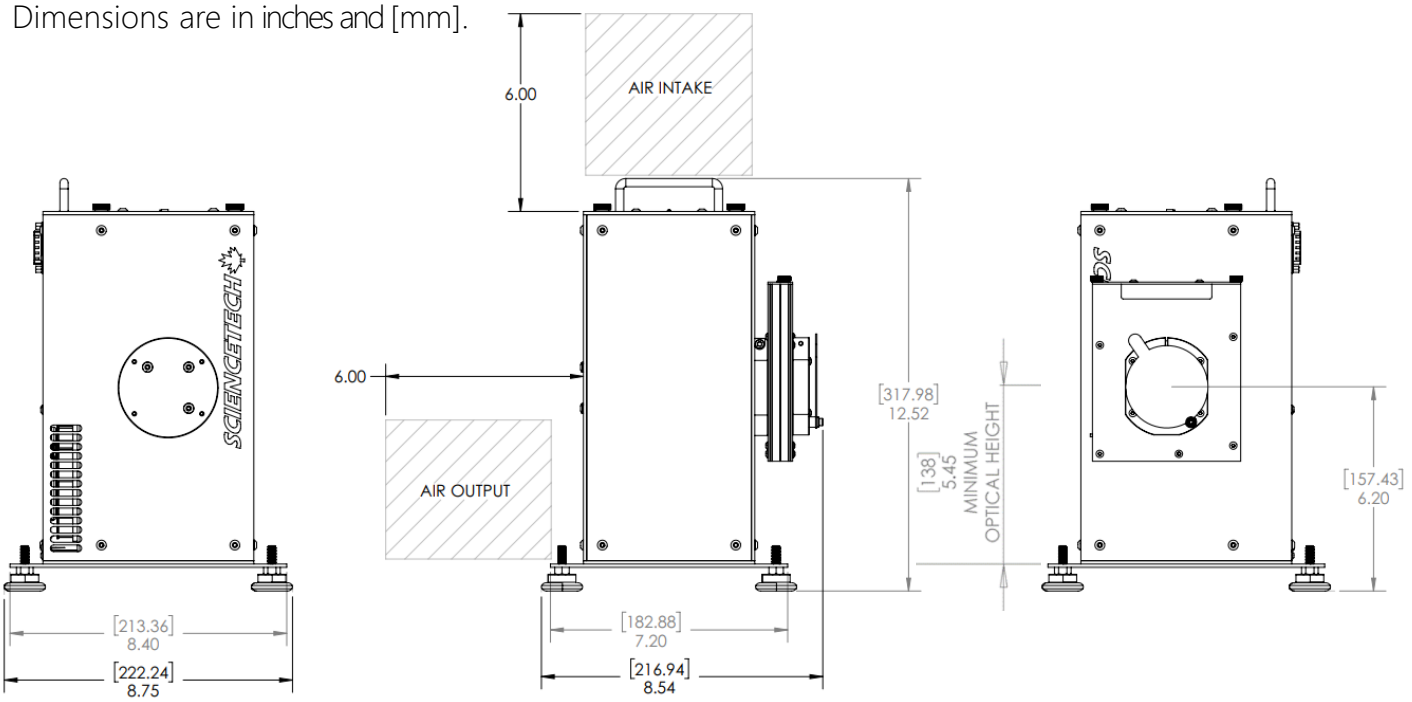
Dark safety glasses (720-0159)

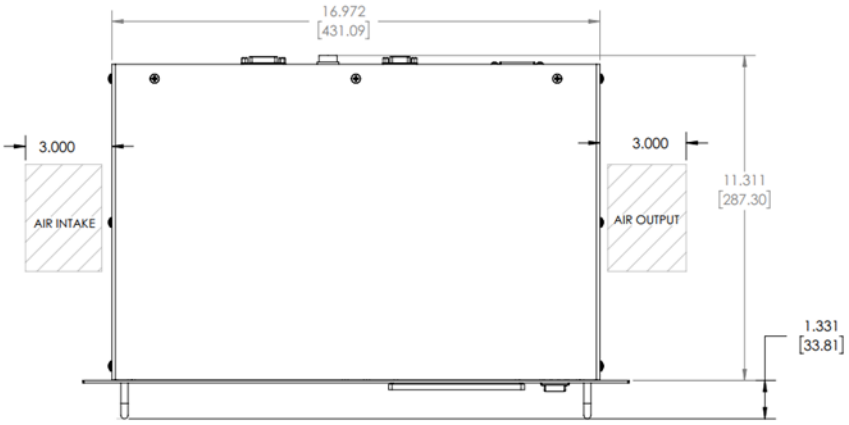
UV Dark safety glasses.

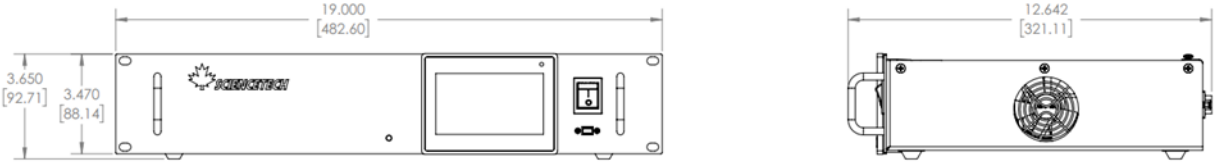
SF Solar Simulator

DIMENSIONS

Dimensions are in inches and [mm].







SF Solar Simulator

ORDERING INFORMATION

Model	Part Number	Description
SF150-1.5G-ABA	160-9050-C05	150 W Arc Lamp, AM1.5G Filter, Class ABA, 1" Diameter Target
SF150-1.5D-ABA	160-9050-C06	150 W Arc Lamp, AM1.5D Filter, Class ABA, 1" Diameter Target
SF150-0.00-ABA	160-9050-C07	150 W Arc Lamp, AM0 Filter, Class ABA, 1" Diameter Target
SF150-X.XX-UBA	160-9050-C08	150 W Arc Lamp, No Filter, Class UBA, 1" Diameter Target
SF300-1.5G-AAA	160-9050-C09	300 W Arc Lamp, AM1.5G Filter, Class AAA, 1" Diameter Target
SF300-1.5D-AAA	160-9050-C10	300 W Arc Lamp, AM1.5D Filter, Class AAA, 1" Diameter Target
SF300-0.00-AAA	160-9050-C11	300 W Arc Lamp, AM0 Filter, Class AAA, 1" Diameter Target
SF300-X.XX-UAA	160-9050-C12	300 W Arc Lamp, No Filter, Class UAA, 1" Diameter Target
SF300-1.5G-ABA	160-9050-C13	300 W Arc Lamp, AM1.5G Filter, Class ABA, 2" Diameter Target
SF300-1.5D-ABA	160-9050-C14	300 W Arc Lamp, AM1.5D Filter, Class ABA, 2" Diameter Target
SF300-0.00-ABA	160-9050-C15	300 W Arc Lamp, AM0 Filter, Class ABA, 2" Diameter Target
SF300-X.XX-UBA	160-9050-C16	300 W Arc Lamp, No Filter, Class ABA, 2" Diameter Target
HPF-LP-400-FT-3	640-9021	Long Pass Filter, 400nm cut-on
HPF-LP-420-FT-3	640-9020	Long Pass Filter, 420nm cut-on
HPF-LP-NIR-FT-3	640-9015	Long Pass Filter, 700nm cut-on
HPF-LP-UVA-FT-3	640-9017	Long Pass Filter, 320nm cut-on
HPF-LP-VIS-FT-3	640-9014	Long Pass Filter, 400nm cut-on, for mid-range power
HPF-BB-NIR-FT-3	640-9012	Hot Mirror for UV Applications, 700-1100nm block
HPF-BB-UVB-FT-3	640-9018	Bandblock Filter, 300-420nm block
HPF-BB-VIS-FT-3	640-9016	Bandblock Filter, 400-700nm block
HPF-BP-VIS-FT-3	640-9019	Bandpass Filter, Visible, Blocks UV/NIR
MF-FT-3	640-9050	Mounted Mesh Neutral Density Filter, Various Transmissions
Custom Filters	Custom	Custom filters—please inquire.
LH-DFS	101-8015	Downward Facing Stand for LH series and SF Solar Simulators
SOL-METER	125-9011	Calibrated Sun Meter
SOL-REF-Q	125-9060	Calibrated Reference Cell, Sciencetech or external lab calibration options
SCI-MO	125-9040	Monitor Detector Assembly
MULTIMETER	125-9030	Multi-ranging Multimeter and Test Leads
SSIVT-C	175-9120	Current-Voltage Measurement System (IV Tester) for Continuous Solar
SCP-4G	165-8214	Probe Station, 4 Probes, Gold Spring Probes
SCI-SCC3-TE	165-8202	Solar Cell Chuck, TE-cooled, Vacuum-ready, 9 cm × 9 cm (3.5" × 3.5")
SCI-SCC3-L-B	165-8221	Solar Cell Chuck, Liquid-cooled, Rear Contact, 9 cm × 9 cm (3.5" × 3.5")