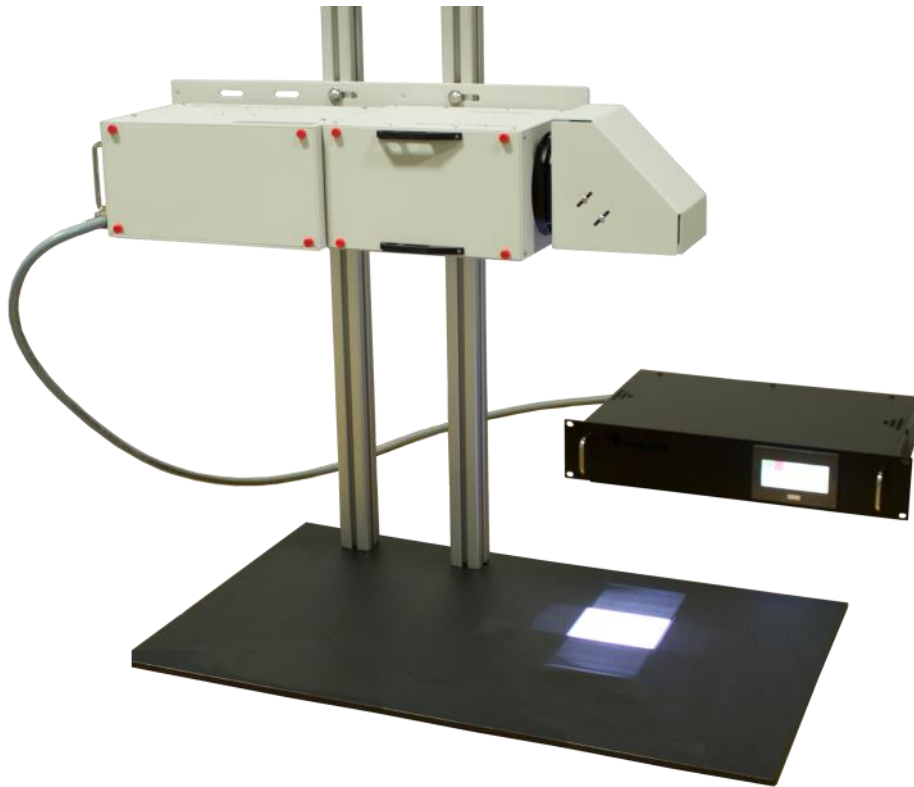


Small Area Solar Simulators

SciSun series



Features

- Class AAA specification (ASTM, IEC)
- Illumination area: 50x50mm
- Touchscreen power supply with control software included
- Manual shutter included (electronic shutter available)
- Variable attenuator from 0.1–2 suns
- Plug and play operation
- Long working distance can facilitate glovebox integration

Applications

- Photovoltaic Testing
- Environmental Testing
- Photobiology and Photochemistry
- Material and degradation testing



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SCIENCETECH
Making Light Work Better

Small Area Solar Simulators SciSun series

Overview

Sciencetech's line of SciSun solar simulators are easy to use, economically priced, and technically superior. The SciSun line is designed for researchers who do not require a large field of illumination. They can produce up to **2 Suns** and feature Class AAA specifications.

The SciSun series provides a flexible output orientation that can be adapted to different requirements. The standard configuration is downward-facing; however, a horizontal output can be achieved easily.

All SciSun models include:

- arc lamp housing with integrated igniter
- xenon arc lamp
- filter holder
- beam turner (variable illumination directions)
- quality control report

Non-LP series models also include:

- touchscreen power supply interface
- power supply control software
- manual variable attenuator
- height-adjustable stand

Specifications

STANDARDS

SciSun solar simulator specifications listed are according to ASTM E927-19 and IEC-60904-9 unless otherwise stated.

| Model | SciSun-300 | SciSun-LP-300 | SciSun-150 | SciSun-LP-150 |
|---------------------------------------------------------------|-----------------------------------------------------------|---------------|----------------------------|---------------|
| Part Number | 160-9101 | 160-9104 | 160-9103 | 160-9105 |
| Target Area | 50 × 50 mm | | | |
| Irradiance Uniformity | Class A | | | |
| Irradiance at Target (AMI.5G Sun=100mW/cm ²) | Up to 2 Sun | | Up to 1 Sun | |
| Lamp Wattage (watts) | 300 | | 150 | |
| Spectral Match AM 1.5G | Class A | | | |
| Lamp Type | Xenon Short Arc , Ozone free | | | |
| Temporal Stability | Class A | | | |
| Working Distance (mm) | 380 ± 15 | | | |
| Manual Shutter | Included | | | |
| Manual Variable Attenuator | Included | Available | Included | Available |
| Dimensions (L×W×H) | 535 × 183 × 188 mm | | | |
| Weight without PS (kg) | 8.5 + 8 (stand) | 8.5 | 8.5 + 8 (stand) | 8.5 |
| Power Supply Model | 601-300 | EPS-300 | 601-150 | EPS-150 |
| Power Requirements | 110-240V, 50Hz/60Hz , 450W | | 110-240V, 50Hz/60Hz , 250W | |
| Stability / Ripple / Regulation | 0.05% / < 1% / 0.02% current variation for 5V line charge | | | |

Please note: Due to our continuous improvement system, all specifications are subject to change without notice.

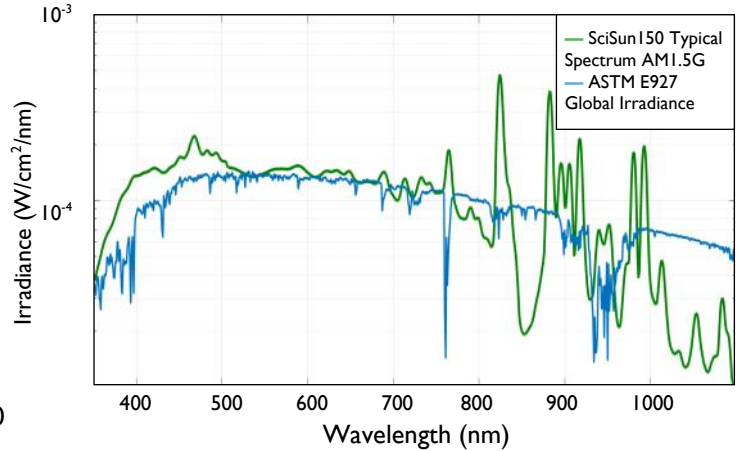
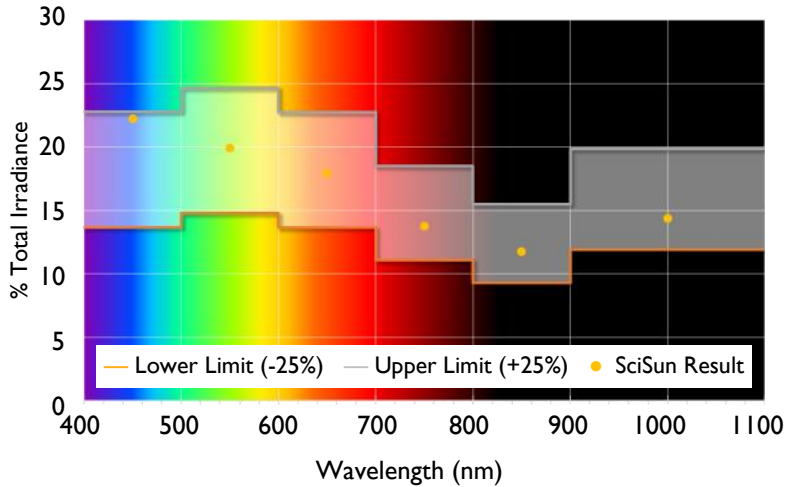
Small Area Solar Simulators SciSun series

Solar Simulator Classification Measurement

Class A Spectral Match Measurement:

SciSun solar simulators match Class A spectral match when used with a compatible air mass filter (sold separately; see below using an AM1.5G filter). All testing results are for an example SciSun-150 and individual reports will vary.

Spectral Match of SciSun-150



Class A spatial non-uniformity (NU):

SciSun solar simulators meet Class A spatial non-uniformity by default (see below).

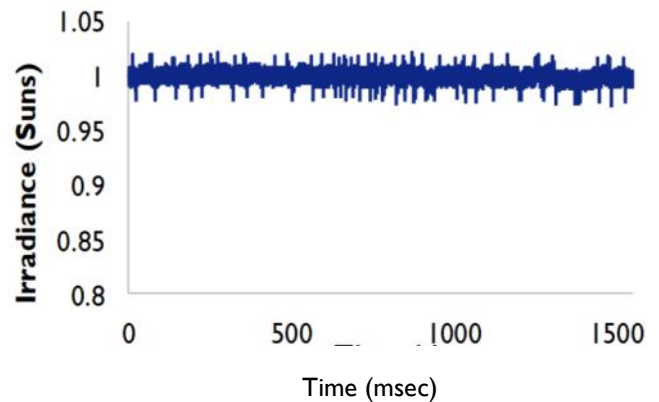
Non-uniformity = **1.3%**

Class B may also be available over larger target sizes upon request.

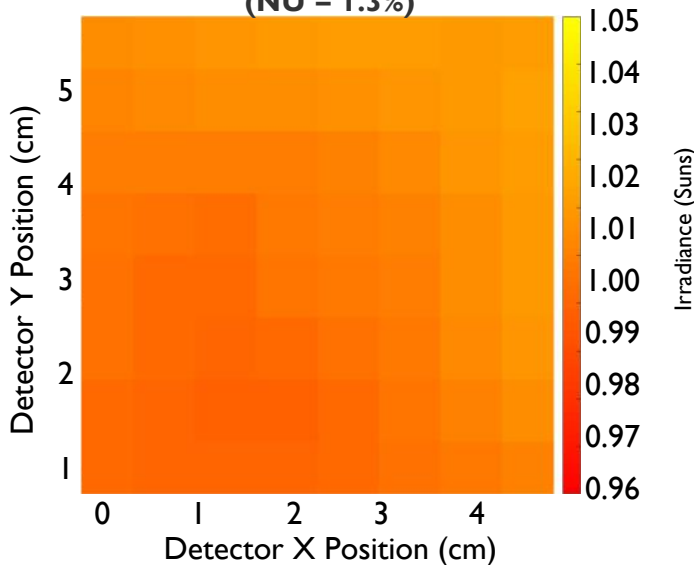
Class A Temporal Instability:

SciSun solar simulators meet Class A temporal instability.

Temporal Instability of SciSun-150



**Irradiance (Suns) by X and Y position
(NU = 1.3%)**



STANDARDS

SciSun solar simulator specifications listed are according to ASTM E927-19 and IEC-60904-9 unless otherwise stated. We can accommodate testing to match several standards.

Testing procedure is as per ASTM E927-19 is provided by default. Please specify upon ordering if matching IEC-60904-9 standards is required.

Small Area Solar Simulators SciSun series

Standard Features

| Spectral Filter Options | |
|-------------------------|-----------------------|
| Model | Description |
| AMI.5G-FT-3 | AMI.5G Filter—Class A |
| AMI.0D-FT-3 | AMI.0D Filter—Class A |
| AMI.5D-FT-3 | AMI.5D Filter—Class A |

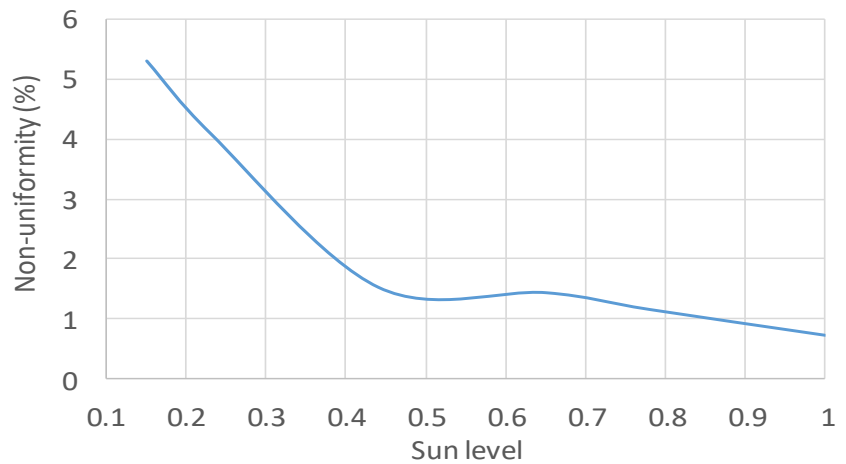
FILTER BOX ASSEMBLY

This system has a modular optics assembly 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 such as bandpass filters and neutral density filters.

Variable Aperture VAR-ATTN-M

Sciencetech's SciSun solar simulators include a variable aperture component, which allows variation of the output irradiance level without adjusting the power supply. The range of attenuation is continuously variable from 0.1 - 2 suns. This enables easy change between output irradiance values. Irradiance values lower than 1 sun increase the system's non-uniformity. This data set is taken from a SciSun-I50 and non-uniformity with the VAR-ATTN-M may vary between models.

Non-uniformity of SLB solar simulator output by sun level using VAR-ATTN-M attenuator



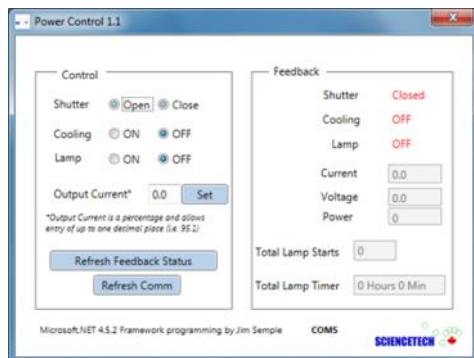
POWER SUPPLY AND SOFTWARE CONTROL

Each SciSun series solar simulator (non-LP series) comes with a 601-series power supply.

Standard features included with Sciencetech's 601-series power supplies:

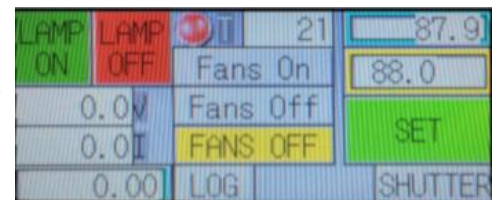
- Touchscreen interface
- Shutter and exposure control*
- Single connection for lamp power, cooling, and communication
- Lamp starts and timer log
- Fan cooling safety interlock
- RS232 software GUI included

The SciSun-LP series features the EPS-series simplified power supply, which lacks a touchscreen, computer control, or control of electronic accessories.



Software GUI for power supply control

601-series touchscreen power supply main control screen



601-series touchscreen power supply automatic shutter control screen



601-series power supply

* if electronic shutter is supplied

Small Area Solar Simulators SciSun series

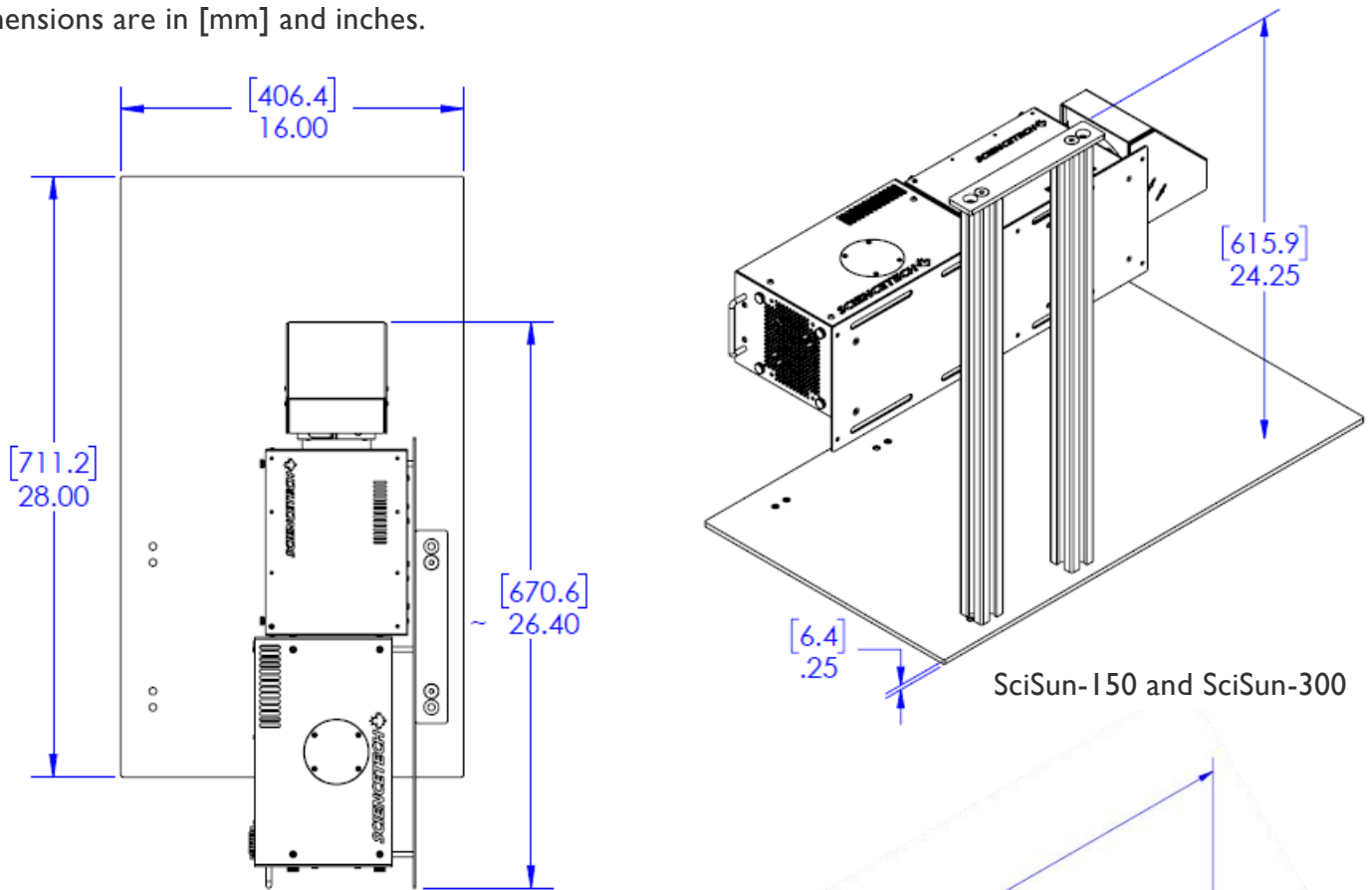
Popular Accessories

| | | |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| SOL-METER (125-9011) | SSIVT-REF (125-9007) | SC-LT-Q (585-0154) |
| Solar Power Meter, a digital meter for use with solar calibrated detectors (e.g. SSIVT-REF or SC-LT-Q) | SSIVT Reference Detector | Calibrated Reference Cell, Quartz Window, traceable to NIST and NREL. |
|  |  |  |
| SSIVT-20C (175-9103) | SCI-SCC3-TE (165-8202) | SCI-SCC3-L-B (165-8221) |
| 20W IV Tester for Continuous Solar Simulators (current range = 1 A, voltage range = 200 V) | 3.5" x 3.5" Solar Cell Chuck, TE Cooled, Computer controllable, Vacuum Ready** | 3.5" x 3.5" Solar Cell Chuck, Liquid Cooled, Rear Contact** |
|  |  |  |
| SCP-4T (165-8211) | SCI-REF-NL (125-9028) | HAS (101-8024) |
| Probe Station, 4 Probes, Tungsten Needle-tip Kelvin Probes*** | A simple PCB mounted solar cell, as a reference cell. No load. | Height-adjustable stand. |
|  |  | |
| MF-49-FT-3 (640-9006) | SH-LH (127-9005) | |
| Wire mesh neutral density filter capable of blocking 49% of incident light. 75 mm diameter. | Computer controlled shutter. Installs inside SciSun (non-LP versions only). | |

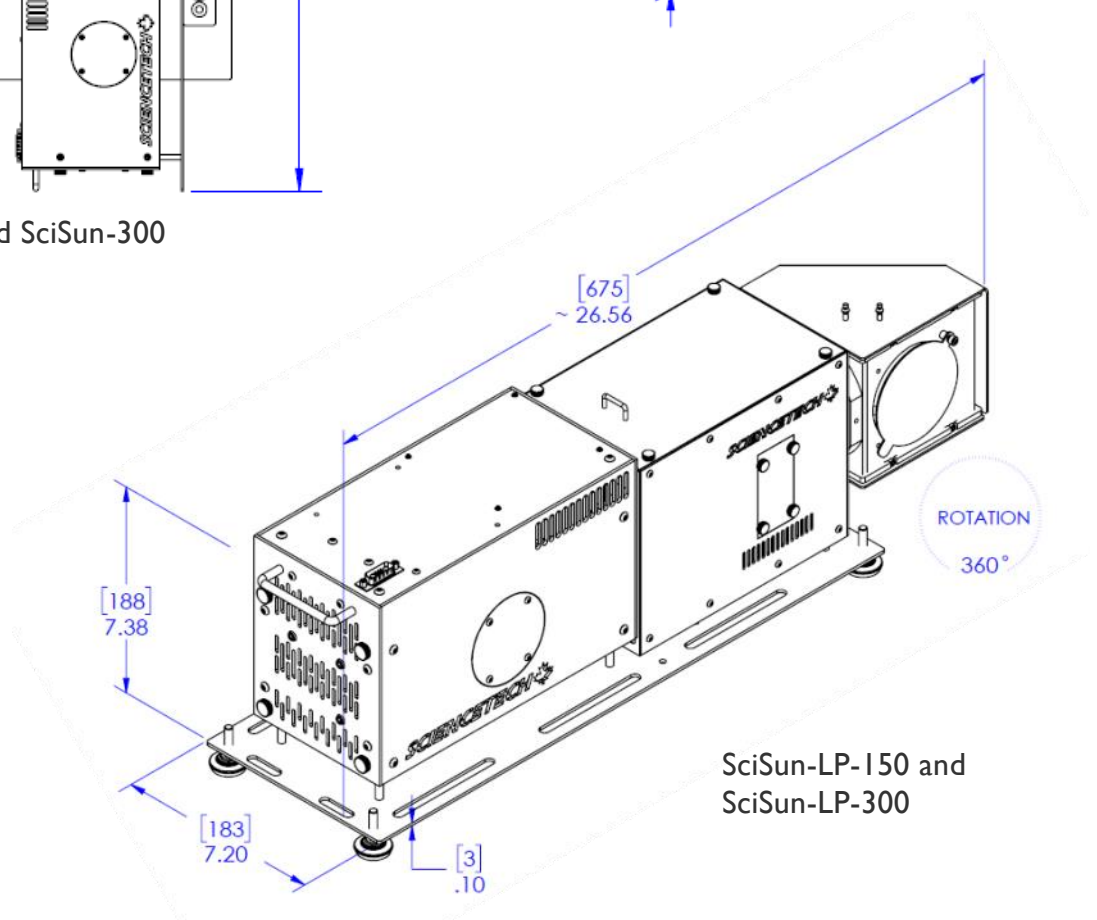
Small Area Solar Simulators SciSun series

Dimensions

Dimensions are in [mm] and inches.



SciSun-I50 and SciSun-300



SciSun-LP-I50 and
SciSun-LP-300