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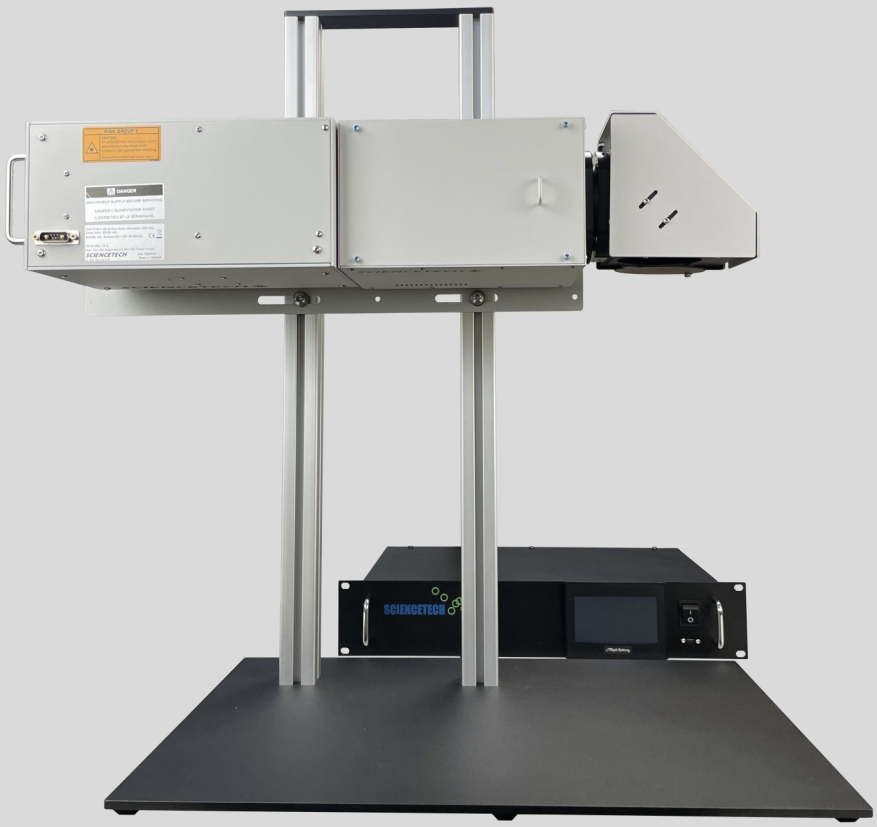
SCIENCETECH
Making Light Work Better



Applications

- Photovoltaic Testing
- Environmental Testing
- Material and degradation testing
- Photochemistry • Photocatalysis
- Photosynthesis • Photobiology

Features

- Economical & advanced configurations available
- Class AAA/A+A+A+ specification (ASTM, IEC)
- AM1.5G, AM0 spectral matches available
- Illumination area: 50 × 50 mm
- Touchscreen-controlled power supply includes PLC with control software, manually-controlled option is simple, economical
- Beam turner provides continuously adjustable beam direction in 360°
- Manual shutter included (electronic shutter available)
- Variable attenuator from 0.1 – 2 suns
- Plug and play operation
- Long working distance can facilitate glovebox integration
- CE Compliant

SciSun-AM1.5G (left) shown with included CTBT-3 beam turner, included power supply and optional HAS adjustable stand.

SciSun Series

Small Area Solar Simulators

AM1.5G | AM0 | A+A+A+

MADE IN CANADA
FABRIQUÉ AU CANADA

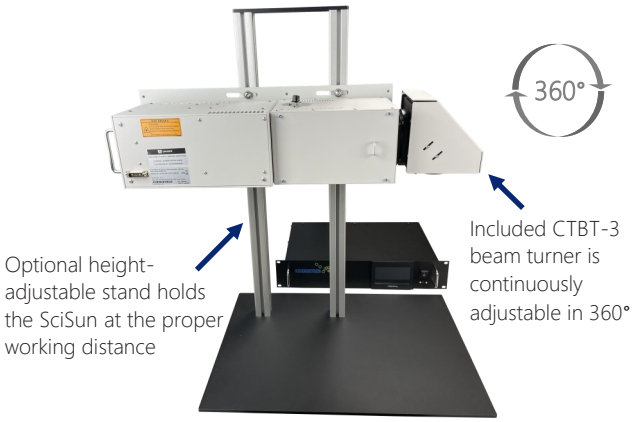
Version 4.12 2026-07-06

SciSun Solar Simulators

OVERVIEW & SPECIFICATIONS

Sciencetech's line of SciSun solar simulators are easy to use, economically priced, and technically superior. The SciSun line is designed to affordably provide a solution for researchers who require a relatively small field of illumination. They can produce an irradiance of up to **2 Suns** and feature up to Class A+A+A+ specifications.

The SciSun series provides a flexible output orientation that can be adapted to different requirements. The standard configuration is horizontal; however, a downward-facing output can be achieved with the addition of a height-adjustable stand.



Specifications

Model	SciSun-AM0	SciSun-AM1.5G		SciSun-A+
	300 W	300 W	150 W	300 W
Target Area	50 × 50 mm			
Spectral Match[1]	A	A	A	A+
Spatial Non-Uniformity[2]	A	A	A	A+
Temporal Instability[3]	A	A	A	A+
Irradiance at Target (AM1.5G 1 Sun = 1000 W/m^2) (AM0 1 Sun = 1366 W/m^2)	Up to 1.5 Sun[2]	Up to 2 Sun[2]	Up to 1 Sun[2]	Up to 1 Sun[2]
Lamp Power (watts)	300	300	150	300
Lamp Type	Xenon Short Arc , Ozone free			
Working Distance (mm)[4]	With CTBT-3: 380 ± 15 With Beam Turner Removed: 475 ± 15			
Manual Shutter	Included, Motorized shutter available			
Manual/Motorized Variable Attenuator	Optional			Not available
Dimensions (L × W × H)	675 × 183 × 188 mm			
Weight without PS (kg)	8.5			
Touchscreen Power Supply Model	PS-XE300-A-T	PS-XE300-A-T	PS-XE150-A-T	PS-XE300-A-T
Manual Power Supply Model	PS-XE300-A-M	PS-XE300-A-M	PS-XE150-A-M	N/A
Power Requirements	100-240 V, 50-60 Hz, 450 W	100-240 V, 50-60 Hz, 450 W	100-240 V, 50-60 Hz, 250 W	100-240 V, 50-60 Hz, 450 W
Stability / Ripple / Regulation	0.05% / < 1% / 0.5% current variation for 5 V line charge			

[1] Measured with scanning spectroradiometer calibrated as per ASTM G138-06.
[2] Measured using NIST-traceable secondary reference cell.
[3] Determined from 20 measurements spaced at 250 ms, Number of power line cycles (NPLC)=1.
[4] The specific instrument's working distance will be supplied with the unit's test report after alignment. This distance will fall inside the specified range. The working distance is not adjustable. Please contact us if you require a specific working distance.

Standard Included Components

- Air mass filter
- Arc Lamp Housing with integrated igniter
- Xenon arc lamp
- Filter holder
- Neutral Density Filter for 1 Sun Operation (AM1.5G, 300 W version only)
- Quality Control Report
- Power supply
- Power supply control software (touchscreen version only)
- Manually-adjustable shutter (motorized available)

STANDARDS

SciSun Solar Simulators are designed to meet the following standards:

ASTM E927-19 | IEC-60904-9-Ed.3

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

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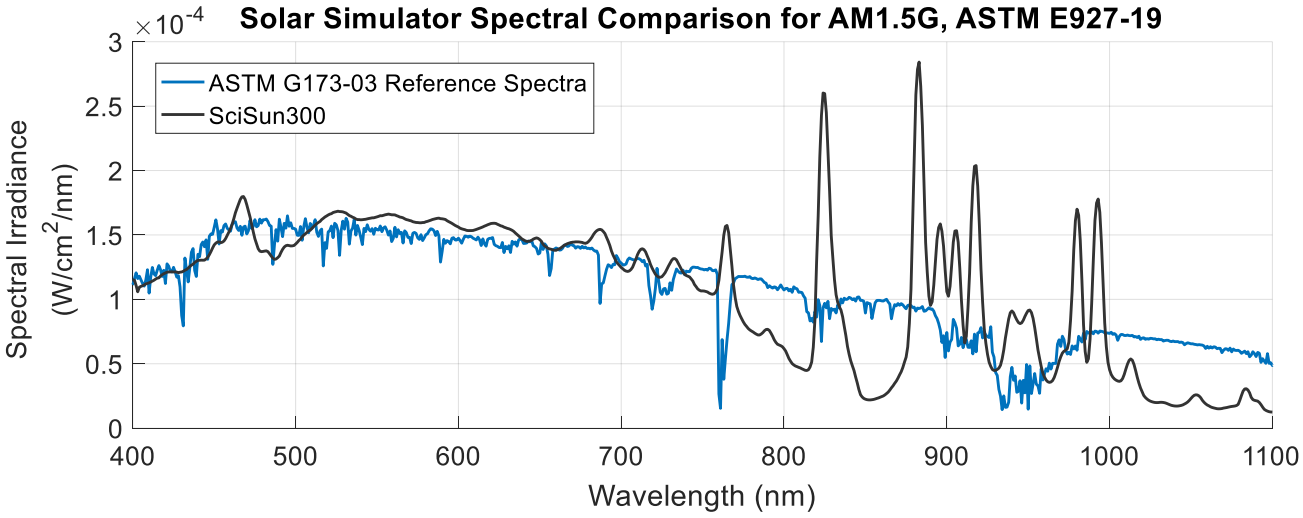
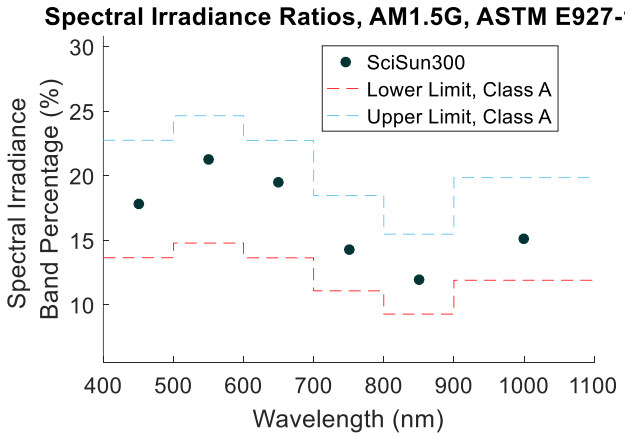
SciSun Solar Simulators

CLASSIFICATION AAA

Class A Spectral Match

SciSun solar simulators match Class A or Class A+ spectral match when used with a compatible air mass filter (see below using an AM1.5G filter). The standard SciSun achieves Class AAA specifications, shown below.





Solar Simulator Standards

SciSun solar simulator specifications listed are according to ASTM E927-19 and IEC-60904-9-Ed.3 unless otherwise stated. We can accommodate testing to match several standards. Testing procedure as per ASTM E927-19 provided by default. Please specify upon ordering if testing against IEC-60904-9-Ed.3 is required.

SciSun Solar Simulators

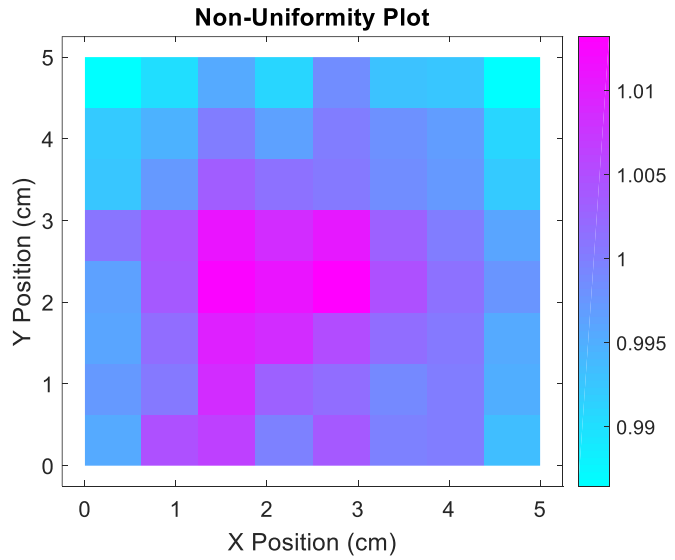
CLASSIFICATION AAA

Class A spatial non-uniformity (NU):

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

Non-uniformity = Less than 2% for Class A

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

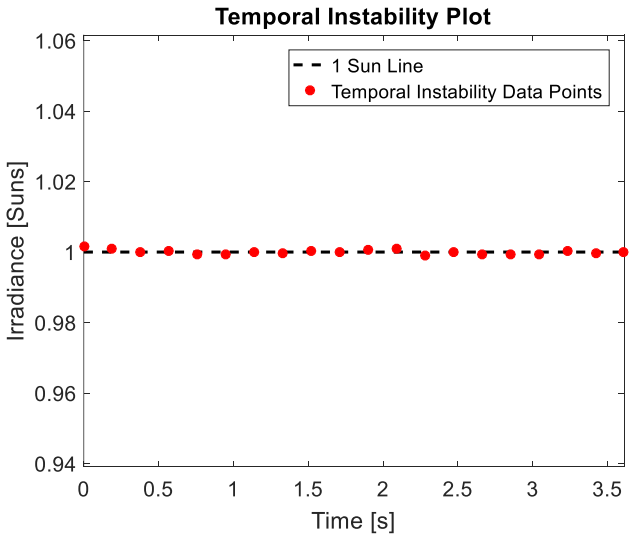


Non-Uniformity Map of a Class AAA SciSun Solar Simulator.

Detector Area:	0.30 cm^2
Number of Measurement Points:	64
Measurement Point Area:	0.39 cm^2
Maximum Irradiance:	1.013 Suns
Minimum Irradiance:	0.986 Suns
Sample Standard Deviation of Spatial Non-Uniformity:	0.006 Suns
Spatial Non-Uniformity of Irradiance:	1.40%
Classification:	A

Class A Temporal Instability:

Standard SciSun solar simulators meet Class A temporal instability, with a temporal instability requirement of less than 2% for Class A.



Temporal Instability Graph of a Class AAA SciSun Solar Simulator.

Detector Area:	4 cm
Time Between Data Points:	0.253 Sec
Number of Power Line Cycles (NPLC):	1
Total Measurement Points:	20
Maximum Irradiance:	1.002 Suns
Minimum Irradiance:	0.999 Suns
Temporal Instability of Irradiance:	0.13%

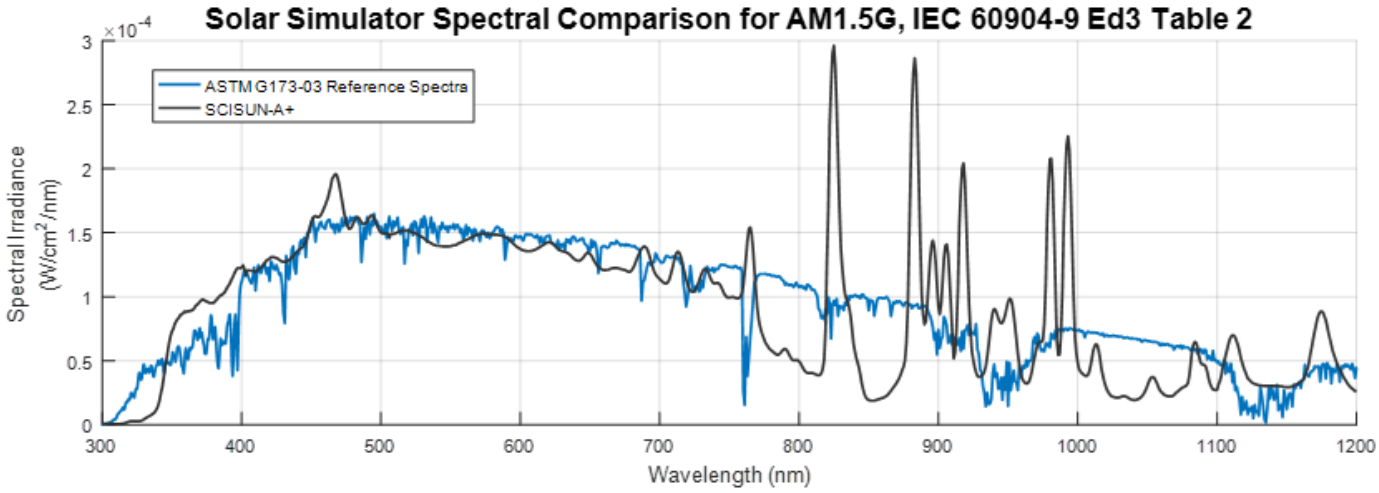
SCIENCETECH

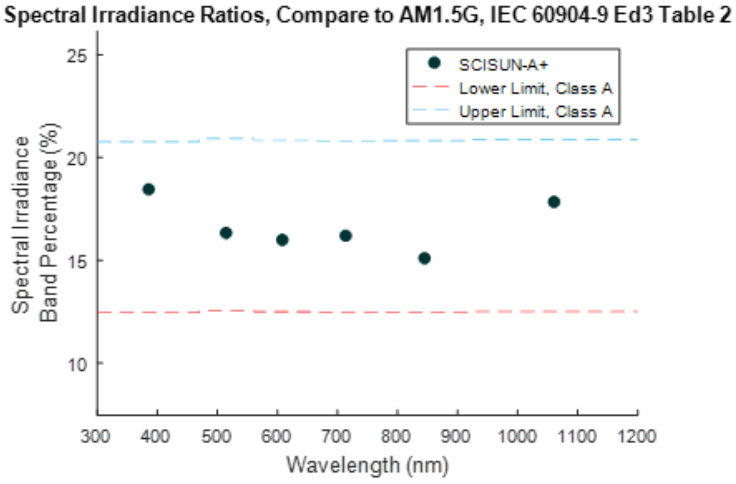
SciSun Solar Simulators

CLASSIFICATION A+A+A+

Class A+ Spectral Match

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





Wavelength (nm)	Percentage (%)	Class
300-470	18.47	A+
470-561	16.37	A+
561-657	16.00	A+
657-772	16.20	A+
772-919	15.13	A+
919-1200	17.83	A+

Spectral Deviation (SPD): 29.5 Spectral Coverage (SPC): 99.6

Solar Simulator Standards

SciSun-A+ solar simulator specifications listed are according to IEC-60904-9-Ed.3 unless otherwise stated.

Class A+A+A+ solar simulators are tested to IEC-60904-9Ed.3 by default. Please inquire about other standards; we can accommodate many standards for testing.

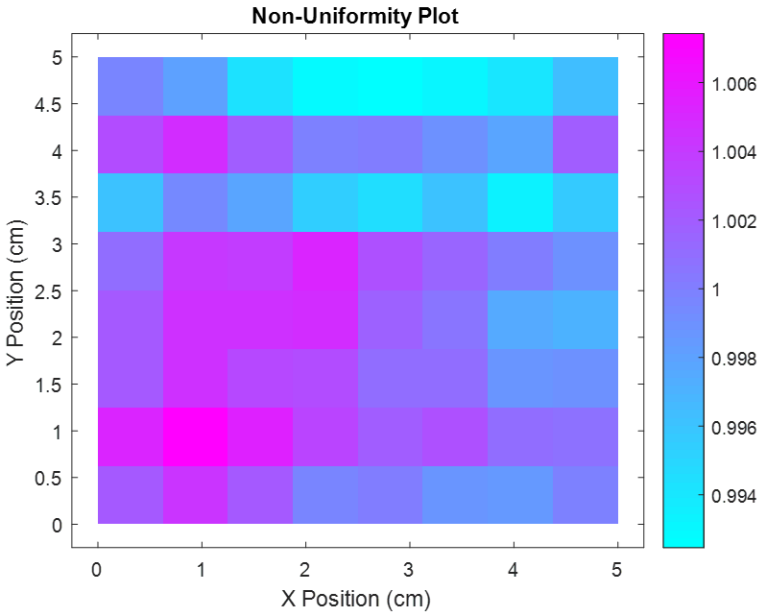
SciSun Solar Simulators

CLASSIFICATION A+A+A+

Class A+ spatial non-uniformity (NU):

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

Non-uniformity = Less than 1%.

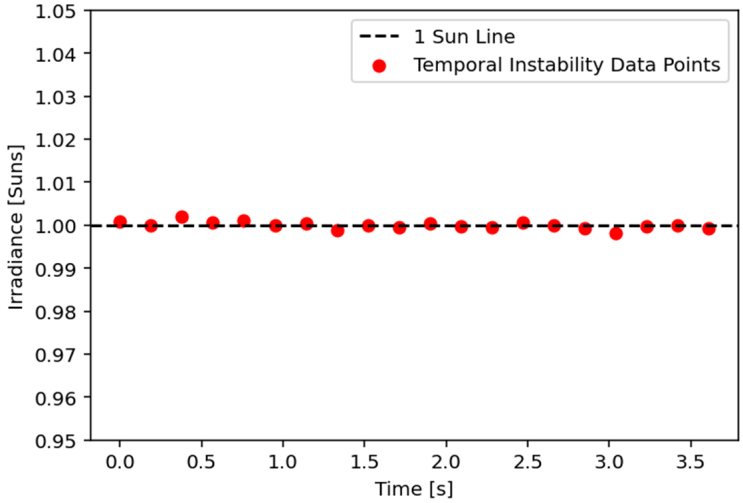


Detector Area:	0.391 cm^2
Number of Measurement Points:	64
Measurement Point Area:	0.391 cm^2
Maximum Irradiance:	1.0074 Suns
Minimum Irradiance:	0.9924 Suns
Sample Standard Deviation of Spatial Non-Uniformity:	0.0035 Suns
Spatial Non-Uniformity of Irradiance:	0.748 %
Classification:	A+

Non-Uniformity Map of a Class A+A+A+ SciSun Solar Simulator.

Class A+ Temporal Instability:

SciSun-A+ solar simulators meet Class A+ temporal instability, with a temporal instability of less than 1% LTI (long term instability) and less than 0.25% STI (short term instability).



Detector Area:	4 cm^2
Time Between Data Points:	0.19 seconds
Number of Power Line Cycles (NPLC):	1
Total Measurement Points:	20
Maximum Irradiance:	1.0019 Suns
Minimum Irradiance:	0.9980 Suns
Temporal Instability of Irradiance:	0.19%
Long-Term Instability (LTI):	0.19%
Short-Term Instability (STI):	0.10%
Classification:	A+

Temporal Instability Graph of a Class A+A+A+ SciSun Solar Simulator.

SCIENCETECH

SciSun Solar Simulators

CONFIGURATION OPTIONS

Power Supply Option

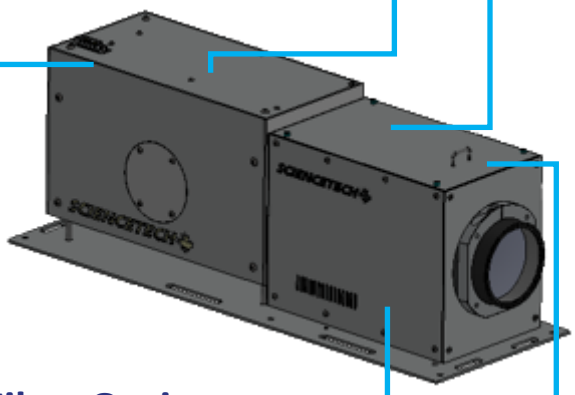
The power supply selection dictates what kind of control options are available.

The manual power supply is the most economical solution. With this option, you can turn the power supply on and off manually and set the current level to the lamp. No other control options are available with the manual power supply.

The computer-controlled power supply (adjustable, touchscreen) allows access to a variety of computer-controllable systems. Selecting this power supply option provides the greatest number of control options.

Power Supply Options

- Computer-controlled power supply
- Manual power supply



Xenon Lamp Power

The selection of xenon lamp power limits the sun level achievable.

Xenon Lamp Options

- 150 W Xenon Arc Lamp (AM1.5G only)
- 300 W Xenon Arc Lamp

Shutter

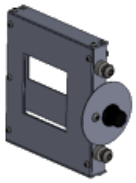
A manual or motorized shutter may be configured. Motorized shutters require adjustable touchscreen power supplies.

Shutter Options

- Manual Shutter
- Motorized Shutter

Variable Attenuator

Controls the output irradiance level without adjusting the power supply. The range of attenuation is continuously variable from 10% to 100%. Uniformity is best maintained at specific output levels. Non-uniformity versus output level for the VAR-ATTN-M may vary between models. Motorized attenuators require touchscreen, computer-controlled power supplies. Attenuators are not available for the SciSun-A+.



Variable Attenuator options

- None
- Manual attenuator
- Motorized attenuator

Spectral Filter Options

AM1.5G: See the SciSun-AM1.5G (160-9108) or SciSun-A+ (160-9011) line

AM0: See the SciSun-AM0 line (160-9109)

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SciSun Solar Simulators

POWER SUPPLY SELECTION

Touchscreen Power Supply: PS-XE###-A-T

Two power supplies are compatible with the SciSun solar simulator. Selecting the computer-controlled power supply option will include a feature-rich, adjustable touchscreen power supply.

(Above) Computer-controlled power supply, (Left) Computer-controlled touch screen power supply main control screen, (Right) Computer-controlled touchscreen power supply automatic shutter control screen

	Computer-Controlled	Manual
Lamp Power Control	✓	✓
Current and voltage display	✓	✓
Touchscreen interface	✓	✗
Motorized shutter control capability	✓	✗
Computer control of power supply possible	✓	✗
Log of lamp starts and lamp timer	✓	✗
RS232 software GUI included	✓	✗

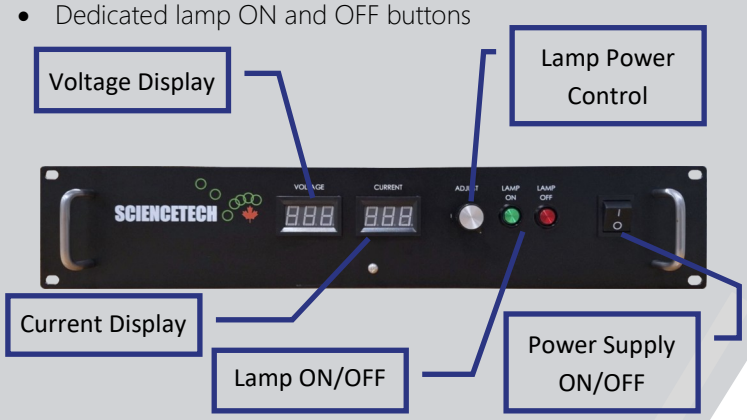
Standard features included with Sciencetech's computer-controlled power supplies:

- 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

Manual Power Supply - PS-XE###-A-M

Selecting the manual power supply option provides the most economical solution. The manual power supply includes:

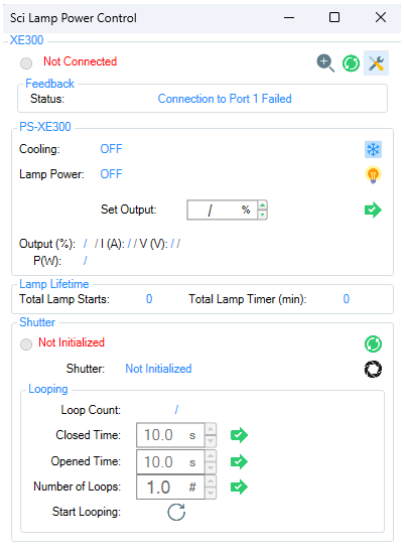
- 2 LCD screens to display current and voltage
- Adjustable knob for controlling lamp power
- Dedicated lamp ON and OFF buttons



The manual power supply does not include software and **cannot** be computer-controlled. It cannot control an automated shutter.

Software Included

Computer-controlled (touchscreen) power supplies come with SciLampPower Control (shown below).



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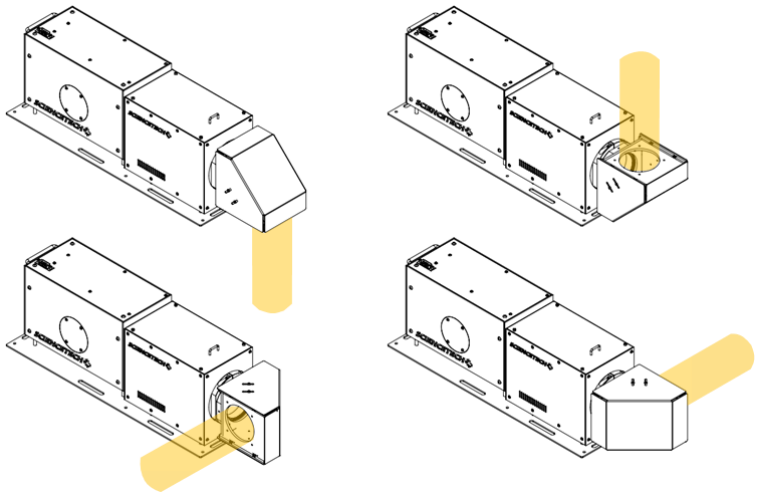
SciSun Solar Simulators

BEAM DIRECTION OPTIONS

A CTBT-3 beam turning unit is **included** with each SciSun solar simulator to manipulate output beam direction. It is possible for the user to remove the CTBT -3. The CTBT-3 is **required** for Class A+A+A+ operation of the SciSun-A+.

CTBT-3 (160-9029)



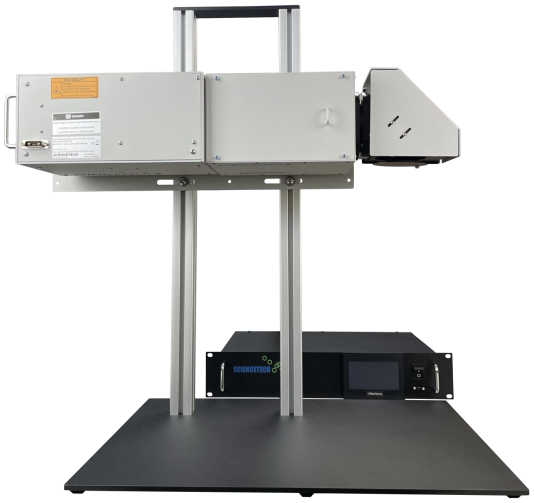
360° beam output orientation options available.

Effect on Working Distance

By default, the SciSun working distance (including the CTBT-3) is 380 mm. If a CTBT-3 is removed, the working distance is 475 mm.

Adding a height-adjustable stand (HAS, 101-8024) , provides simple, manual height adjustment. Screws are used to manually secure the SciSun to the stand. Best for infrequent height changes.

- Add a HAS to the standard system (including CTBT-3) to produce a downward-facing beam.
- Remove the CTBT-3 or orient it to the side and use a HAS stand to provide horizontal illumination at a wide range of heights.



SciSun with HAS Stand Option

SciSun Solar Simulators

WORKSTATION OPTIONS

Workstation stands provide a convenient option for positioning your sample in the SciSun's target area. Workstation options feature a rack for mounting the power supply, with an adjustable sample tray and shelf for storing accessories.

Adjusting the sample tray is easier and more convenient with the workstation, so it is recommended to select a workstation-style stand if the sample height needs to be adjusted frequently. A built-in dark chamber option is available for exclusion of extraneous light.

SCISUN-WS (160-9032)

Workstation Stand option for SciSun.

Includes mounting for compatible power supply and adjustable sample stage.

A good choice for frequent stage height changes (due to varying sample thickness, etc.).

SCISUN-WS-D (160-9031)

Workstation for SciSun with dark chamber.

Includes mounting for compatible power supply and adjustable sample stage.

A good choice for frequent stage height changes (due to varying sample thickness, etc.) in a dark environment.

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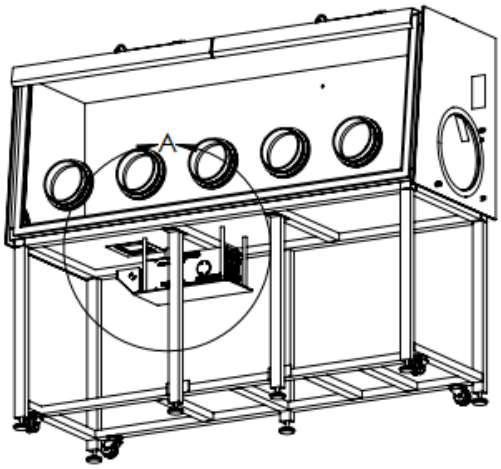
SciSun Solar Simulators

GLOVEBOX INTEGRATION

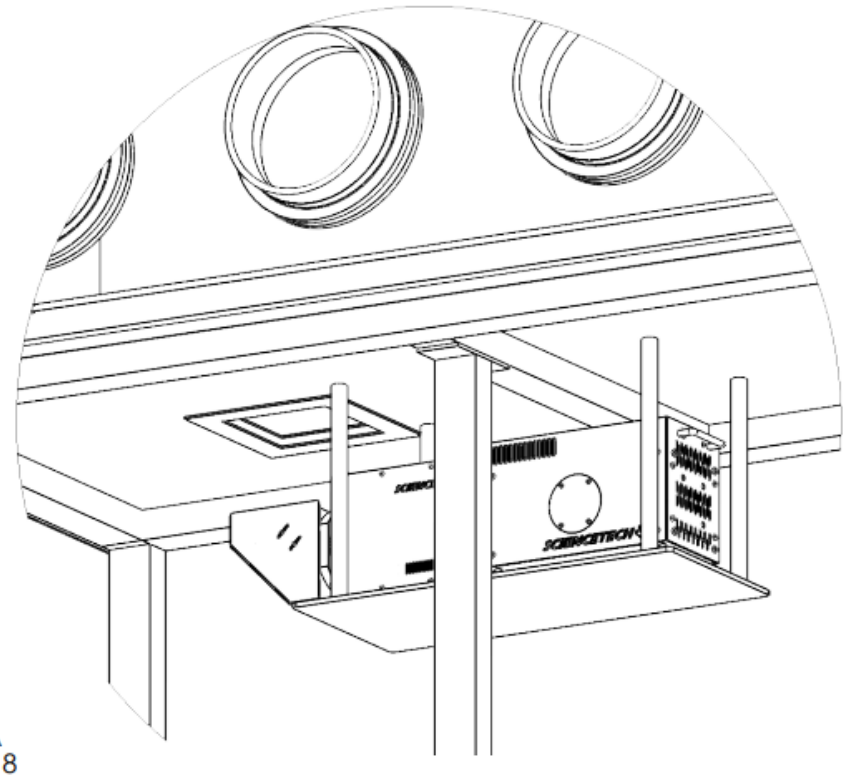


SciSun with glovebox. Power supply not shown.

Mounting tray for glovebox is not included. Please inquire for a suitable mounting tray for your glovebox model.

SciSun Integrates Easily with a Glovebox

The compact size and flexible output of the SciSun allows for easy integration with a glovebox. Using the included beam turner to orient the beam in an upward-facing direction, the output light can be directed up through a window onto a sample.



DETAIL A
SCALE 1 : 8

Model	SKU	Description
MF-FT-3	640-9050-C10	Standard 75 mm (3") neutral density mesh filter. 71% transmission option is recommended with a 300 W SciSun-AM1.5G for glovebox integration to accommodate potential losses through glovebox window.

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SciSun Solar Simulators

FILTERING OPTIONS

Filter Box Assembly

SciSun simulators have a modular optics assembly which can hold a range of filters in Sciencetech's standard FT-style filter holder. SciSun simulators include two FT-style filter slots. The most popular options are AM filters; however, a range of other filter options are available, such as bandpass filters and neutral density filters.

HPF-LP-###-FT-3 (640-90##)

High power long pass filters. Various cut-on wavelengths available.

Filters must be FT-3 format.

HPF-BB-###-FT-3 (640-90##)

High power band block filters. Various configurations available. Filters must be FT-3 format.

HPF-BP-###-FT-3 (640-90##)

High power bandpass filters. Various configurations available. Filters must be FT-3– format.

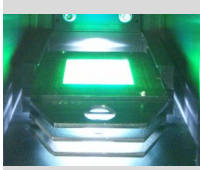
MF-FT-3 (640-9050)

Standard 75 mm (3") neutral density mesh filters. Made from stainless steel mesh.

12, 19, 34, 42, 49, 55, 71, and 78% transmission options available.

Custom Filters (Custom)

Sciencetech has years of experience designing and sourcing custom filters. Contact us with your application and requirements now!



FH-SS-ADD (160-8044)

This option adds an additional 2 filter positions to the FH-SS filter holder. Designed to be used with Sciencetech FT-3 type filter holders.

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SciSun Solar Simulators

MONITORING ACCESSORIES

SOL-METER (125-9011)

Solar Power Meter, a digital meter for use with solar calibrated detectors (e,g. SOL -REF-Q and SSIVT-REF).

SCI-MO Reference Cell (125-9040)

A robust, PCB-mounted solar cell with active area of 22x7mm, it is intended to be used as a reference monitor for determining solar simulator sun level. Sciencetech's most economical monitoring solution.

MULTIMETER (125-9030)

The SCI-MO reference cell can be paired with a multi-meter to take fast measurement of solar simulator irradiance level.

SOL-REF-Q (125-9060)

Calibrated Reference Cell, Quartz Window. Options available for Sciencetech calibration or NIST/NREL-traceable calibration by third party ISO/IEC 17025 accredited laboratory. 20×20mm monocrystalline silicon device. Includes RTD and IV connections.

LIS (115-9033)

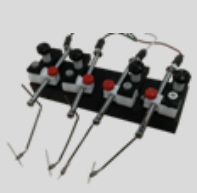
The light intensity stabilizer is meant to stabilize the light output on a time scale of hours or days, useful for longer-running experiments.

SciSun Solar Simulators

IV ACCESSORIES

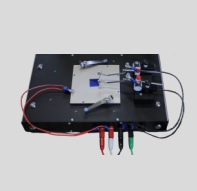
SSIVT-CT-030-1 (175-9120-C05)

30 W IV Tester for Continuous Solar Simulators (maximum voltage = 30 V, maximum current = 1 A). Other IV measurement options available.



SCP-4G (165-8214)

Probe Station, 4 Probes, Gold Spring Probes .



SCC-3 (165-8315)

3.5" × 3.5" Solar Cell Chuck, Uncooled, Vacuum ready.

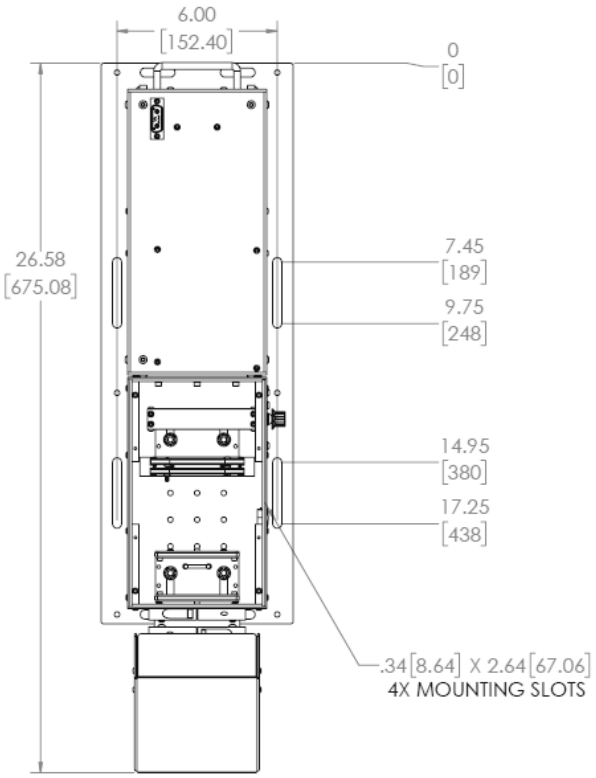
SCC-3-TE (165-8202)

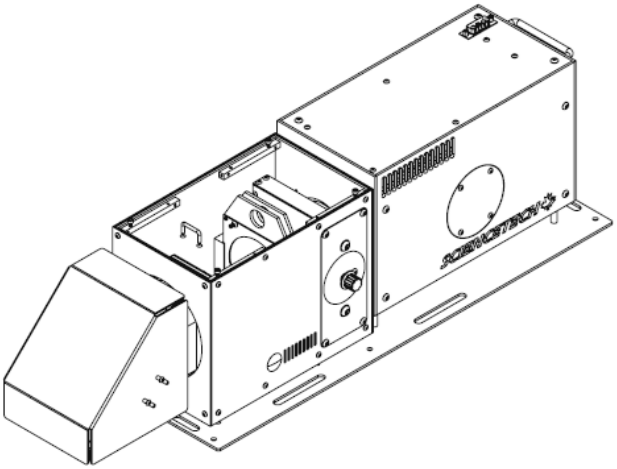
3.5" × 3.5" Solar Cell Chuck, TE Cooled, Computer controllable, Vacuum ready.

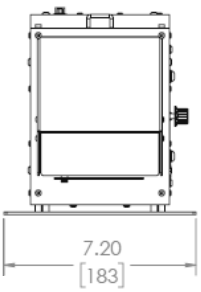
SciSun Solar Simulators

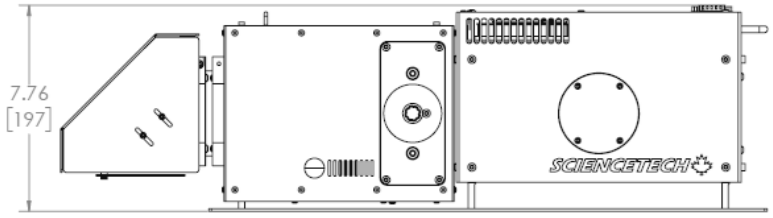
DIMENSIONS

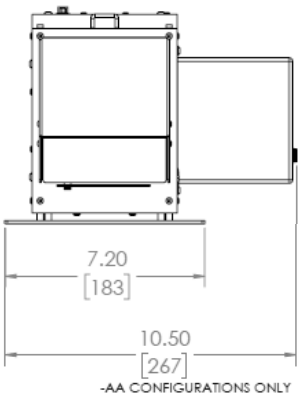
Dimensions are in [mm] and inches.











Please note: Due to our continuous improvement system, all specifications are subject to change without notice. SciSun solar simulator specifications listed are according to ASTM E927-19 and IEC-60904-9-Ed.3 unless otherwise stated.

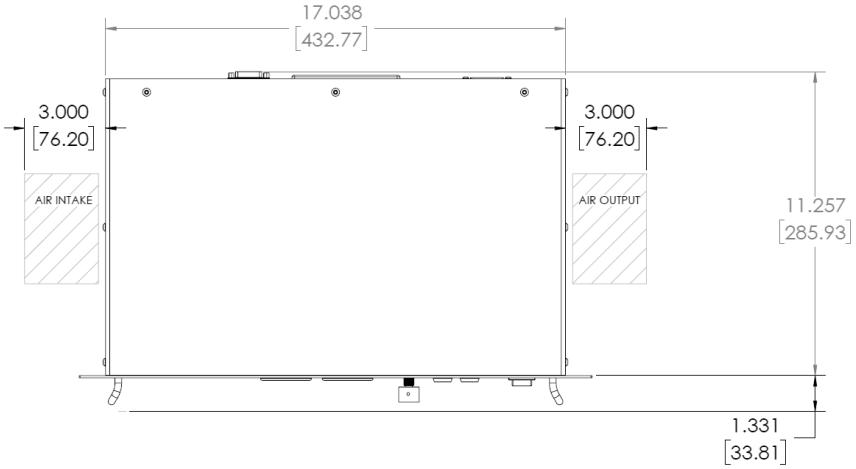
SCIENCETECH

SciSun Solar Simulators

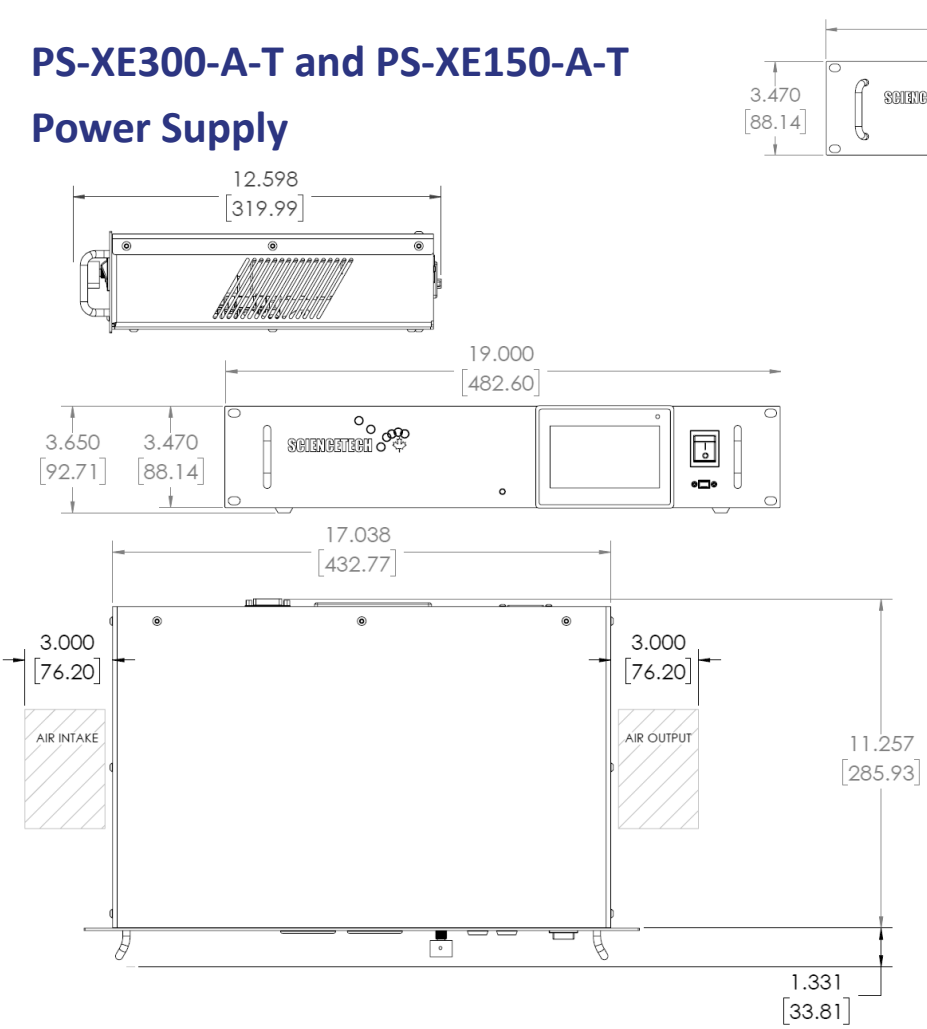
DIMENSIONS

Dimensions are in [mm] and inches.

PS-XE300-A-M and PS-XE150-A-M Power Supply



PS-XE300-A-T and PS-XE150-A-T Power Supply

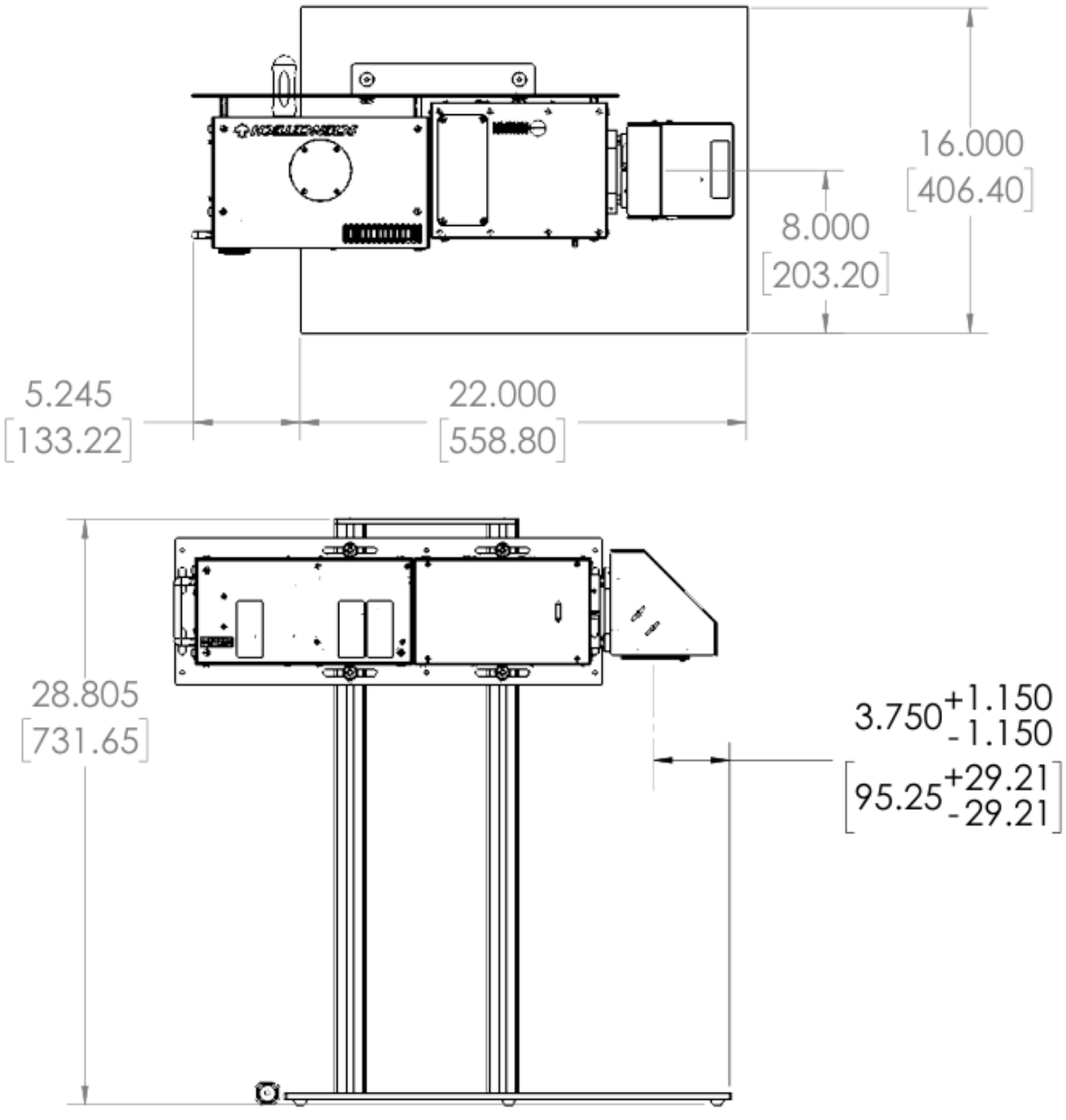


SciSun Solar Simulators

DIMENSIONS

SciSun on Height-Adjustable Stand

Dimensions are in [mm] and inches.

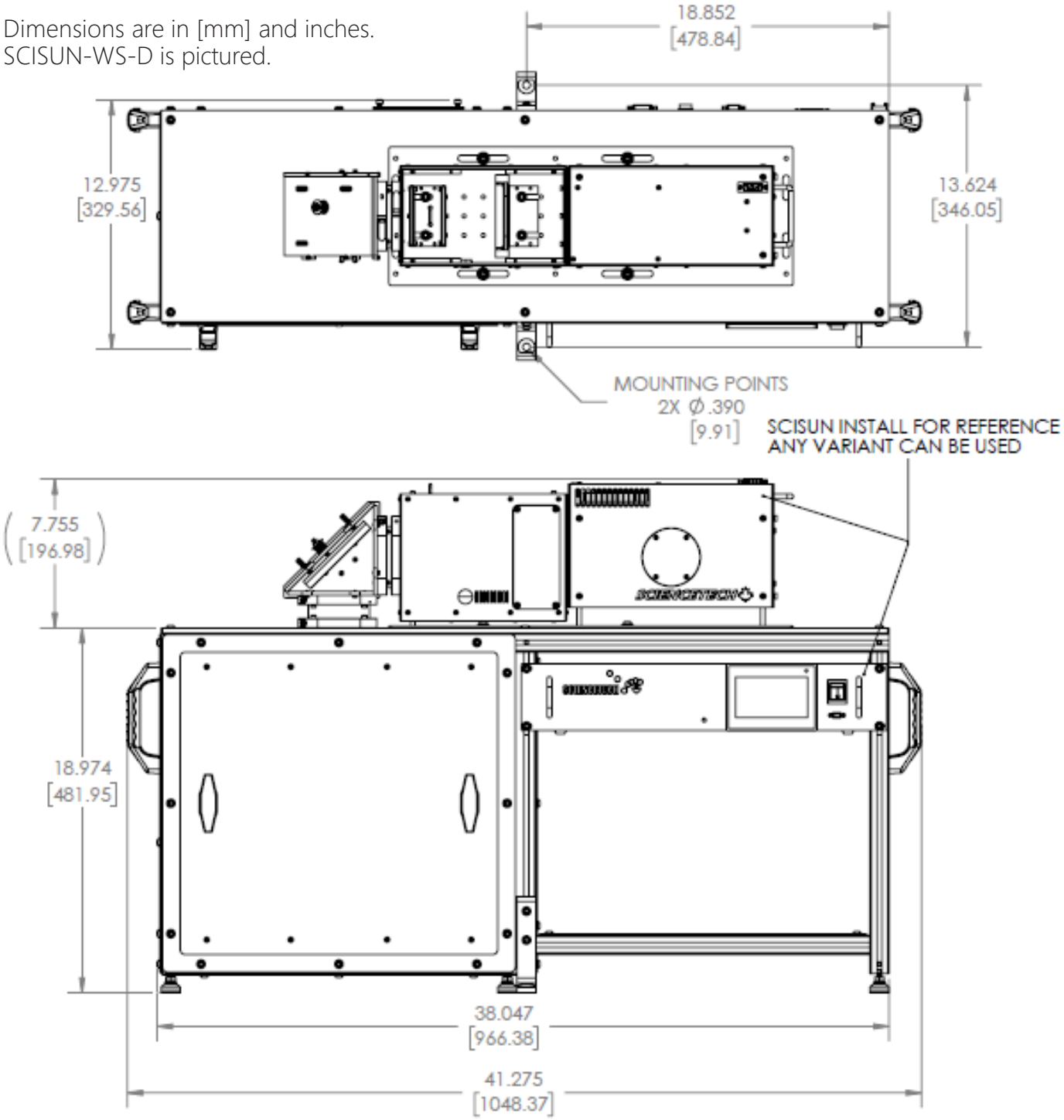


Model	SKU	Dimensions (L x W x H)	Weight
HAS	101-8024	559 x 407 x 732 mm 22 x 16 x 28.9 inches	8 kg

SciSun Solar Simulators

DIMENSIONS

Dimensions are in [mm] and inches.
SCISUN-WS-D is pictured.



Model	SKU	Dimensions (L x W x H)	Weight
SCISUN-WS	160-9032	1049 x 330 x 482 mm 42 x 13 x 19 inches	19 kg
SCISUN-WS-D	160-9031	1049 x 330 x 482 mm 42 x 13 x 19 inches	23 kg

SCIENCETECH

SciSun Solar Simulators

ORDERING INFORMATION

Model	Part Number	Description
		Packages
SciSun-AM1.5G	160-9108	SciSun solar simulator with AM1.5G filter and Class AAA specifications.
SciSun-AM0	160-9109	SciSun solar simulator with AM0 filter and AM0 1 sun irradiance and Class AAA specifications.
SciSun-A+	160-9111	SciSun solar simulator with AM1.5G filter and Class A+A+A+ specifications.
		Accessories
HAS	101-8024	Height Adjustable Stand, SciSun Solar Simulator
SCISUN-WS	160-9032	Workstation Stand for SciSun Solar Simulator
SCISUN-WS-D	160-9031	Workstation Stand for SciSun Solar Simulator, with Dark Chamber
HPF-LP-400-FT-3	640-9021	Long Pass Filter, 400 nm cut-on
HPF-LP-420-FT-3	640-9020	Long Pass Filter, 420 nm cut-on
HPF-LP-NIR-FT-3	640-9015	Long Pass Filter, 700 nm cut-on
HPF-LP-UVA-FT-3	640-9017	Long Pass Filter, 320 nm cut-on
HPF-LP-VIS-FT-3	640-9014	Long Pass Filter, 400 nm 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, 300-420 nm block
HPF-BB-VIS-FT-3	640-9016	Bandblock Filter, 400-700 nm 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.
FH-SS-ADD	160-8044	2 additional filter slots for FT-3-style filters
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
LIS	115-9033	Light Intensity Stabilizer
SSIVT-C	175-9120	Current-Voltage Measurement System (IV Tester) for Continuous Solar
SCP-4G	165-8214	Probe Station, 4 Probes, Gold Spring Probes
SCC-3	165-8315	Solar Cell Chuck, Uncooled, Vacuum-ready, 9 cm × 9 cm (3.5″ × 3.5″)
SCC-3-TE	165-8202	Solar Cell Chuck, TE-cooled, Vacuum-ready, 9 cm × 9 cm (3.5″ × 3.5″)