

## ▶ PRODUCT DESCRIPTION



Sciencetech's Large Area Flash Solar Simulator is capable of illuminating targets of 1m x 1m up to 2m x 2m with uniform solar illumination. Our flash system is manufactured to achieve Class AAA by ASTM standards for targets within that area (IEC and JIS are available upon request). This makes our system one of the largest, most uniform solar simulators currently available on the market.

## ▶ SCIENCETECH



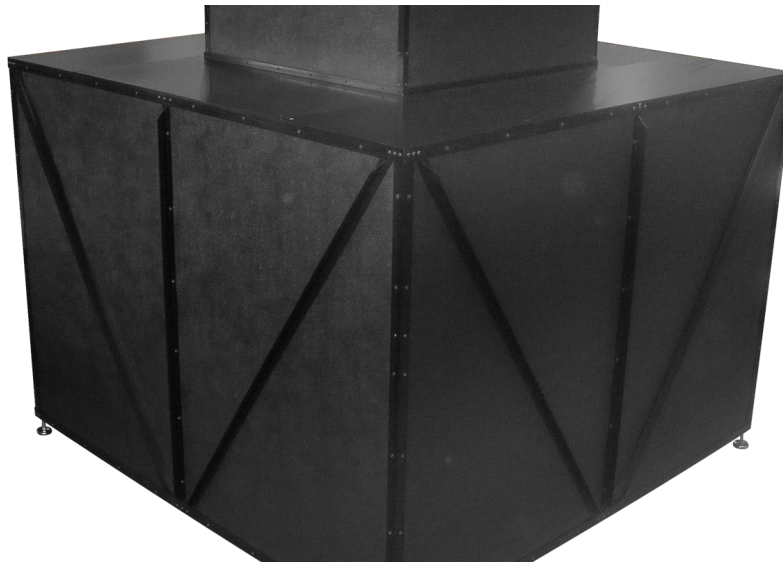
**To Service the New Product Development Market in the Field of Optics and Spectroscopy with Dedication, Integrity, and Excellence.**

**Calibration Measurement Notes:**

- All Specifications for 1 Sun
- Class AAA ASTM E927-10
- AM1.5G unless stated otherwise



## ▶ Large Area Flash Simulator



Sciencetech's flash solar simulators are designed to test large photovoltaic devices up to 2m x 2m (79" x 79") in size. It uses a heavy duty xenon flash lamp and AM1.5G calibrated solar filter to approximate the sun's true spectral distribution following ASTM E927-10 Class A standards. The simulator fires short flashes of light to avoid heating a photovoltaic device for measuring its performance.

The system can operate as a single flash/point, which, when used with a current-voltage measurement system, will produce an I-V data point. Alternatively, multipoint per flash can be collected (Max. number of points in a flash is either 48 or 120 depending on standards to be used).

Sciencetech flash solar simulators can be used on many types of photovoltaic devices. The optional current-voltage measurement system has an active load and wattage range that can be tailored to each type of PV material.

The flash solar simulator utilizes a heavy-duty/low-duty cycle xenon flashtube powered by a digitally controlled power supply. This provides a stable and repeatable flash in a multi-exposure I-V test sequence. The power supply also provides a wide operation range from 70-2400 Joules to accommodate different sizes of photovoltaic panels up to 2m x 2m (79" x 79") and at various intensities from 70-150 mW/cm<sup>2</sup>. To withstand heat stress in a continuous use production operation, the heavy duty xenon flashtube has over dimensioned tungsten electrodes tested to 60,000 Joules.

Sciencetech offers a pulse extension that will increase the pulse length at customer request. This allows the pulse to be extended to either 4.0 or 8.0 msec at 50% power, but comes with a small power reduction (20% reduction for 4.0 msec, 50% for 8.0 msec). Please contact a Sciencetech sales representative for further information and prices.

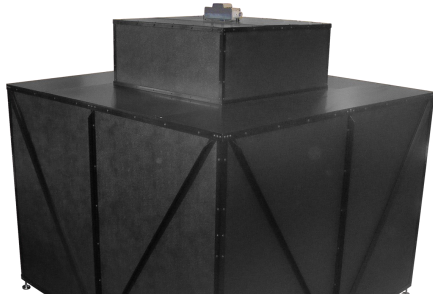


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# ▶ Large Area Flash Simulator

ENCLOSED HOUSINGS



CUSTOM INSTALLATIONS



## Specifications

MODEL	PSSI	PSSI.5	PSS2
Uniform Illumination Area (m)	0.9x0.9	1.5x1.5	1.95x1.95
Uniformity	< 3% (class A ASTM)	<3% (class A ASTM)	<3% (class A ASTM)
Spectral Range	400nm - 1100nm	400nm - 1100nm	400nm - 1100nm
Working Distance	3"	3"	3"
Collimation	Non Collimated	Non Collimated	Non Collimated
Temporal Instability	≤ 2%	≤ 2%	≤ 2%
Temporal Instability Classification	A (ASTM E927)	A (ASTM E927)	A (ASTM E927)
Lamp Power Range <sup>1</sup>	60-150 mW/cm <sup>2</sup>	10-120 mW/cm <sup>2</sup>	10-120 mW/cm <sup>2</sup>
Lamp Type	Helicoidal 4800J Bulb	Helicoidal 4800J Bulb	Helicoidal 4800J Bulb
Lamp Lifetime	Varies with Power: Avg. 25,000 flashes	Varies with Power: Avg. 25,000 flashes	Varies with Power: Avg. 25,000 flashes
Time Between Flashes	Varies with Power: Average 5-10 Sec.	Varies with Power: Average 10-30 Sec.	Varies with Power: Average 10-30 Sec.
Flash Duration	0.5-2.5ms	0.5-2.5ms	0.5-2.5ms
Max Flash Rate	1Sec	10Sec	10Sec

*1) Spectrum changes with power to lamp, spectral match classification is specified for 1 Sun condition*

## Features

- Built-in beam-conditioning reflector to maximize light distribution
- Heavy duty xenon flash tube
- Computer controllable (power level, timing, number of flashes etc.)
- Power supply with ignite
- AM 1.5G filter

## Applications Include:

- Concentrated Photovoltaic panel testing
- Monocrystalline / polycrystalline silicon panel testing
- Multijunction Solar Cells / Panels
- Industrial Quality Control
- New Product Research and Development

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## Optional Component:

**Pulse Stretchers** (versions to provide 4ms or 8ms @ 50% peak

**Class B or C non-uniformity models available**

**Uniformity classification IEC 60904-9 and JISC 8912-1998 available upon request (ASTM is standard)**

**Spectral match to AM0\*, AM1, AM1.5D, AM2.0 available on request**

**Extended Range Air Mass Filters Available 300-1700nm**

**Mesh neutral density filters to reduce irradiance**

**Replacement Xenon flashtube's**

**IV Test Systems**

**Calibrated Reference Cells**

**Calibrated reference detector**

**Work Station**

**Custom Test Rooms**

*\* AM0 filter provides: class C in 300-400nm region, Class A from 400-1100nm and no classification from 1100-1400nm.*

## Voltage Requirements

**100-140VAC / 200-245VAC @ 50/60**

## Power Consumption

**115VAC: 25A on fast charge / 10A on slow charge**

**230VAC: 16A on fast charge / 6A on slow charge**

## Components

Specification	PSS1	PSS1.5	PSS2
Dimensions (LxWxH) m	1.3x1.3x1.3	2.3x2.3x2.3	2.3x2.3x2.3
Weight	120KG	300KG	300KG



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