www.sciencetech-inc.com sales@sciencetech-inc.com +1 (519) 644 0135

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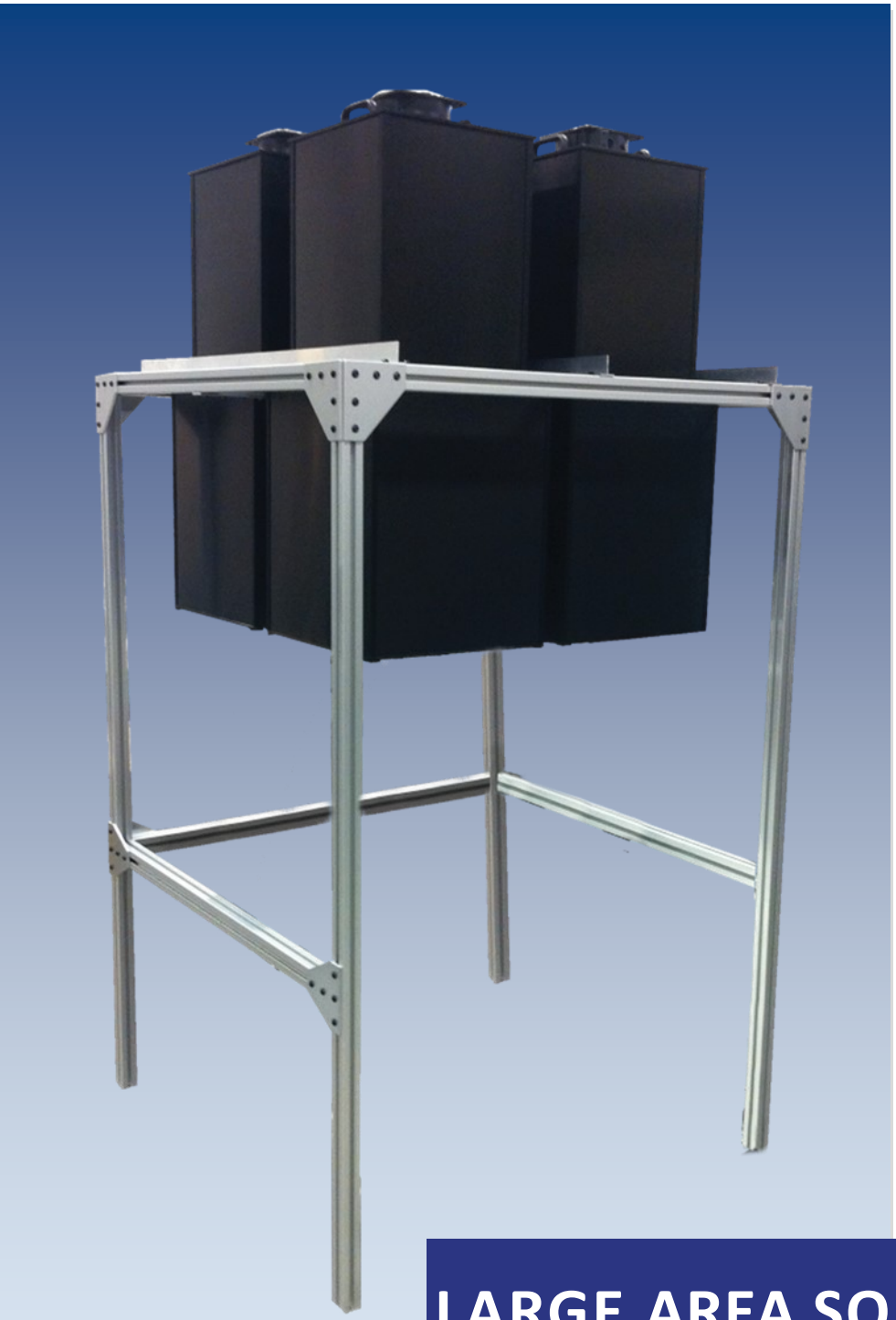
Making Light Work Better



Applications

- Measuring Module Performance
- Monocrystalline / polycrystalline Silicon Panel Testing
- UV Resistance
- System Reliability
- Material Stability
- Colour Fastness
- Accelerated Age Testing

Features

- Large Target Size
- Continuous Illumination
- High Efficiency
- Excellent Depth of Field, Ideal for Irregularly-shaped objects
- 1 Sun Intensity
- Can Be Tiled to Cover Large areas

LARGE AREA SOLAR ILLUMINATOR (LASI) Single or tiled solar illumination system

January 2024 Version 3.5

Large Area Solar Illuminator

OVERVIEW

Each LASI unit measures 0.5 x 0.5 x 1.6m and consists of a light source and beam homogenizer, as well as the power supply and necessary IR filter to adjust to the solar spectrum (for AM1.5G class C).

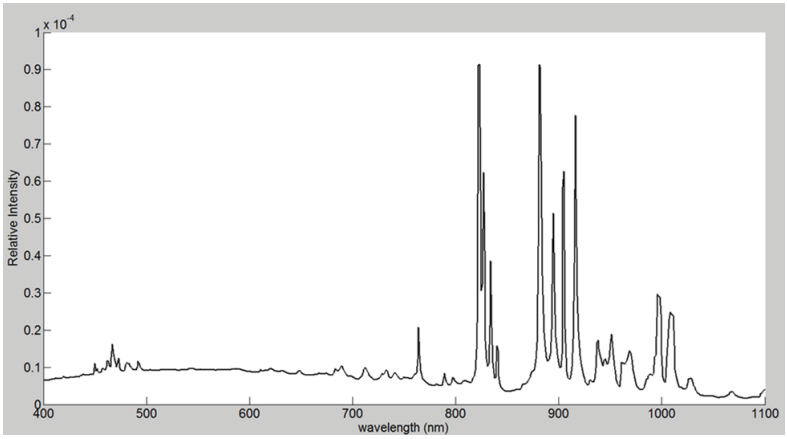
The LASI modular design allows for upgrades to larger target areas in the future by adding multiple LASI units with a gain of 0.5 x 0.5 m with each additional unit arrayed to make the desired target size.

The LASI system produces depth of uniformity and uniformity over larger areas by combining LASI modules together.

Spectral Match

The standard LASI unit includes a thermal optical filter that significantly reduces the infrared wavelength strength emitted by the Xenon arc lamp. The inclusion of the thermal filter allows LASI units to achieve an overall ASTM class C spectral match.

More advanced filters are available to achieve class B or A spectral match if required.



Bin (nm)	Measured	Ideal*	Class
400-500	12.9	18.4	B
500-600	13.7	19.9	B
600-700	12.6	18.4	B
700-800	10.7	14.9	B
800-900	23.8	12.5	C
900-1100	26.3	15.9	C

*ASTM E927

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Large Area Solar Illuminator

SPECIFCIATIONS

Power to Effective Illumination

40% more efficient than traditional metal-halide illumination systems. This results in reduced operating costs, power consumption, higher efficiency, and lower thermal heating of the laboratory environment.

Model	1 LASI	2 × 2 LASI	4 × 4 LASI	6 × 6 LASI
Illumination Area (m)	0.5 × 0.5	1.0 × 1.0	2.0 × 2.0	3.0 × 3.0
Typical Non-uniformity	< +/-15% over 0.3x0.3m	< ±15% over 0.5m×0.5m	< ±15% over 1.5m×1.5m	< ±15% over 2.5m×2.5m
Working Distance (m)	0.4	1	1	1
Collimation Half Angle (°)	±10			
Temporal Instability Classification	Class A			
Spectral Match Classification	Class C for ASTM AM1.5G [2]			
Lamp Power Range (W/m^2)	0.5-1.0			
Lamp Type	1600W Xenon Arc Lamp			
Spectral Range (nm)	350-1800			
Depth of Uniformity (m)	N/A	+/- 0.5m around target plane +/-20% intensity	+/- 0.5m around target plane +/-20% intensity	+/- 0.5m around target plane +/-20% intensity
Duty Cycle	Continuous			
Cooling Mechanism	Forced Air			
Power	220VAC			

1) For 1000W/m^2 illumination level (note use of beam turning mirrors reduces working distance).

2) Better classification achievable with add-on filtering

3) Intensity measured at center of target plane

Custom Solutions

Talk to one of our technical sales personnel if you need a larger area of illumination, higher power, increased collimation, or an extended spectral range for your instrument.

Beam turners are available for some models. Please inquire about your system of interest to find out more.

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Large Area Solar Illuminator

Ordering Information

Modules

Model	Part #	Description
LASI-1	165-9014	1.0 × 1.0
LASI-4	165-9015	4 LASI modules, unmounted
LASI-8	165-9019	8 LASI modules, unmounted
LASI-16	165-9016	16 LASI modules, unmounted
LASI-36	165-9017	36 LASI modules, unmounted
LASI-48	165-9018	48 LASI modules, unmounted
DFS-LASI-1	165-8100	Adjustable holding frame for LASI-1.Downward facing
DFS-LASI-4	165-8101	Adjustable holding frame for LASI-4. Downward facing
CTBT-LASI1	165-8053	Beam turning unit for LASI-1
SFS-LASI-1	165-8102	Holding frame for LASI-1. Horizontal beam
SFS-LASI-2	165-8103	Holding frame for LASI-4. Horizontal beam

Large Area Solar Illuminator

ACCESSORIES

Additional accessories are available and custom accessories can be accommodated by contacting one of our technical sales personnel.

- Test Room for System Enclosure
- Custom Range and Class Spectral Filters
- Adjustable holding frame for LASI 1 / LASI 4. Downward facing.

IV tester Equipment (175-9103)

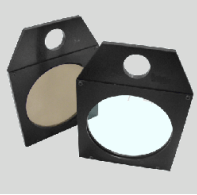
20W. Current Voltage Measurement system (IV Tester) for Continuous Solar Simulators.

SOL-REF-Q (125-9060)

Calibrated Reference Cell, Quartz Window, options available for traceable to NIST and NREL.

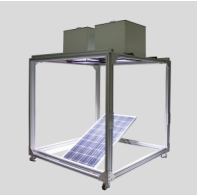
Beam Turner (165-8053)

Beam Turner Unit for Horizontal Operation. For LASI single unit.



Filters

Custom Range and class spectral filters to achieve class B or A.

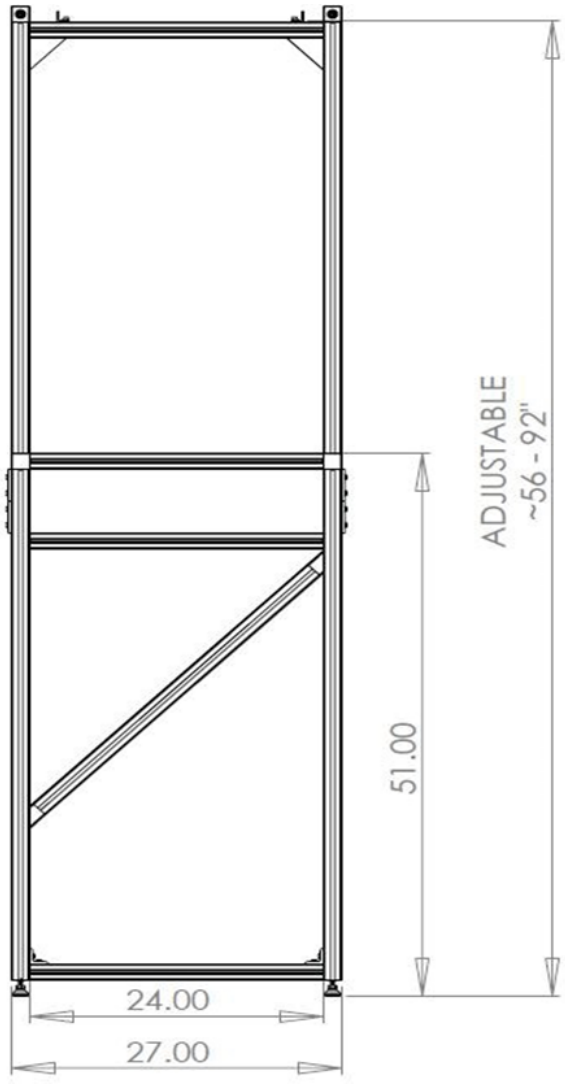


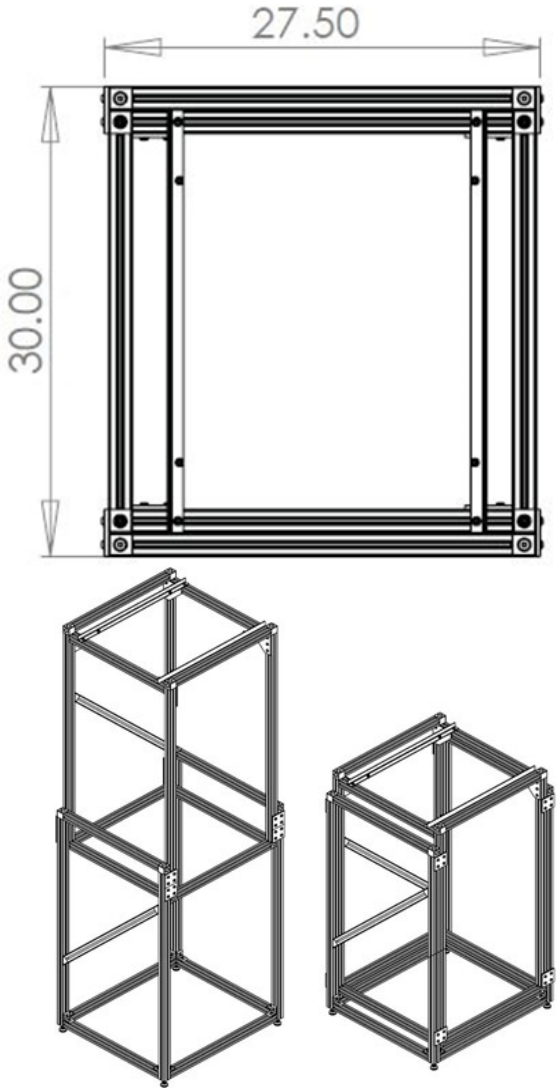
Custom Sample / Panel Holders

Large Area Solar Illuminator

DIMENSIONS

Dimensions are in inches.





Dimensions	
Lamp Housing Dimensions (L × W × H, m)	05 × 0.5 × 1.6 .
Lamp Weight (kg)	45