

# SpectroSun<sup>®</sup> X-25B Mark II

## Steady State Solar Simulator

[www.spectrolab.com](http://www.spectrolab.com)

### Product Highlights



Image for reference only

### Key Specifications & Characteristics:

- Precise Spectral Tuning up to 6 junction cells
- Motorized Iris Control AM0 & AM1.5 Spectrum
- 11" beam diameter with 2% spatial uniformity
- Intensity Stability within 1%
- Improved Setup Time
- PLC instrument control
- Self-contained and easily moveable

### Applications

Steady state solar simulator for use in laboratory or precision production testing and/or calibration of multi-junction solar cell technologies.

### System Description:

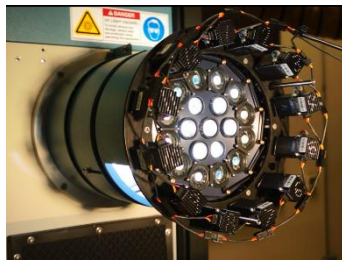
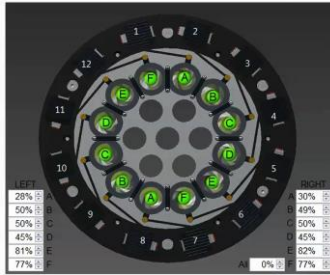
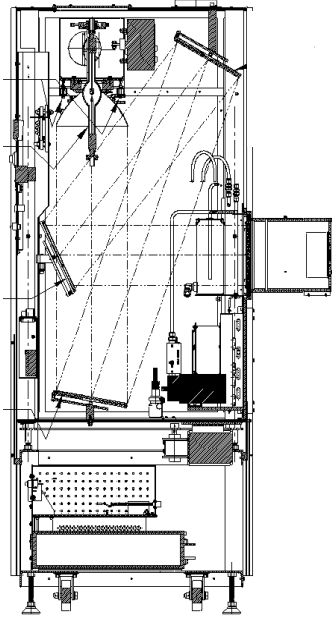
- Steady state solar simulator with closed spectral balancing and matching of AM0 and AM1.5 spectrums with AAA performance. Designed, industry leading manufacturer of solar cells and arrays, for exceptional reproducibility of multi-junction solar cell performance with solar spectrum that can be tailored and balanced to specific cell requirements of up to six junctions.
- Excellent spatial, temporal and spectral stability
- Proven conservatively designed hardware with over 40 years of field heritage and unprecedented long term support
- Fully self-contained cooling system (exhausting to the air handling plenum is suggested)
- +/- 6° Beam collimation
- Source Module's ozone-free xenon short-arc lamp is attached to a special strain-free adjustable mount for positive alignment.

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# SpectroSun® X-25B Mark II

## Steady State Solar Simulator

### X-25B Solar Simulator



B Optics Option & Motorized Irises

### System Features

- UV Quartz Lenses and Iris based optical control for fine-tuning of spectral content for up to six junction cells.
- Computer controlled optics package with motorized irises for fine adjustment of the spectral content
- Labview controlled filter control software package for further integration with user's hardware and software Installed.
- 13" diameter beam; 11" diameter with 2% uniformity.
- 3kW ozone-free xenon short-arc source lamp.
- Compact, multi-mirror molding optics and lenticular lens assembly beam collimation to assure spatial uniformity and good collimation based on patented electroformed aconic collector.
- Electrically driven elevator for adjustability of output beam height from 46" (117cm) to 64" (162.5cm) above floor level.
- Interchangeable optical packages and spectral filtering available.
- Environmental control unit has forced air cooling with 6" (15.2cm) exhaust duct outlet to maintain lamp, collector and douser temperatures within correct operating ranges.
- Safety Interlocks stop or prevent lamp operation in the event of cooling system failure
- Very low ongoing maintenance required.
- High-strength welded steel enclosure design.
- Self-contained and movable (on casters).
- Motorized douser/beam shutter control.

### Beam Specification

- **Spectral Tuning** Spectral adjusting, computer controlled irises control filtered special light through a set of tuning, band-specific filters  
Calibration irises control screen
- **Diameter** 13" (33cm)
- **Uniformity** ±2% uniformity across 11" at 8' working distance
- **Intensity** .9 – 1.5 Solar Constants adjustable within 2%
- **Stability** Instability and localized time variant not to exceed ±1% for time periods of 100 milliseconds to 24 hours.
- **Optics** Standard lenticular optical system with a ±6° divergence angle.
- **Spectral Match** 0.25 to 2.4 micron high-pressure xenon arc spectrum with optical and filter design to match sunlight. Close filtering available for AM0, AM1 and AM1.5.
- **Lamp Life** Lamp Life: Ozone-free Xenon source lamp rated at 1,500 hours pro rata warranted for 750 hours, when used for at least 20 minutes per ignition.
- **Orientation** Horizontal beam with axis 46" (117cm) from floor. Electrically driven elevator assembly, which adjusts beam height up to 64" (162.5cm) from the floor.

### Input Power

- 3 Phase options
  - 230VAC ± 10V @ 60hz, 20amps/phase
  - 460VAC ±20V, 10 amps/phase @ 60hz.
  - Other 3 phase options available

### Dimensions without optics package

- Height: 79" (2m)
- Width: 5" (63.5cm)
- Depth: 32" (81.3cm)
- Weight: 1,000 lbs (454kg),

### SPECTROLAB

A Boeing Company

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