

Terrestrial - High Intensity Pulsed Solar Simulator (T-HIPSS)

Table top Solar Simulator providing up to 2000 Suns for Terrestrial solar cell testing.

Benefits

- System allows for testing of Terrestrial Solar Cells at very high (up to 2000 suns) fluence levels.
- Continuously adjustable (5x) intensity levels with little spectral change.
- Illuminated area is ~4"x4" for T-HIPSS 400 Series
- Well defined and repeatable intensity distribution from uncorrected system.
- Adjustable, unobstructed volume between lamp housing and illuminated volume for easy tooling and robotic manipulations.
- Optional intensity distribution correction masks are available to allow enhanced uniformity control.
- System is pulsed (2.5millisecond) so thermally induced temperature changes are minimized.
- Pulse rates of 1 pulse per 15 seconds are standard; faster production rates achievable.
- Available high speed Data Acquisition Unit (DAU) can perform I-V curve measurements within 2.5 millisecond pulse duration.
- Fundamental spectral content is from a high pressure Xenon Lamp, close to Air Mass 0.
- Spectral content can be changed to simulate various Air Mass Values from AM0 to AM2.5
- Optional diagnostics include intensity distribution measurement system and single pulse spectrometers. (250nm to 1700nm)

Product Description

- **Lamphouse:** Projects multiple, overlapping images of one single lamp at a point in space 25" from the lamp. Spectral filtering can be achieved by introducing balanced spectral filters in matched beam paths.
- **Control Unit:** Contains Pulse Forming Network (PFN), charging and triggering circuits, trigger control logic and safety interlocks.
- **Pulse Forming Network (PFN):** Produces required voltage and current pulses for lamphouse.



Product Description, (continued)

- **Data Acquisition Unit (DAU):** Performs data capture, buffering and data manipulation. Monitors and reports on optical pulse parameters, current and voltage parameters for each pulse. Monitors temperature and pressure sensors. Provides computer interface to master control computer.
- **Control Computer:** PC based control computer for instrument control, data acquisition, diagnostic control, data manipulation and display. Includes large data storage capability, laser printer capability and dual screen visual display.

Features

- Provides for measurement of the I-V Curve on Terrestrial Solar Cells in up to a 4"x4" illuminated areas.
- Continuously adjustable illumination pulse of <200 Suns to >2000 Suns for 2.5 ms every 15 seconds
- Optical spectrum from 250nm to 2500nm approximately matching AM0, modifiable to beyond AM1.5
- Internal diagnostics include current, voltage, optical signals for each pulse
- Optional diagnostics include single pulse Intensity Distribution measurement capability and single shot spectral measurements.
- DAU provides complete electrical, optical and multi-channel test cell parameters for each pulse
- Clear area under lamphouse for test fixtures and/or robotic manipulations.

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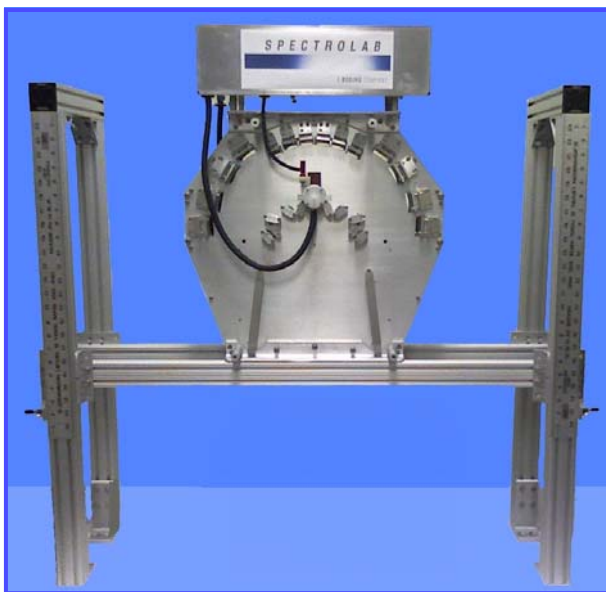
SYSTEM SPECIFICATIONS

T-HIPSS 400 SERIES

	Model 420	Model 460
• Test Plane Area	4"x4"	4"x4"
• Test Plane Uniformity	± 2%	± 2%
• Irradiance Levels	200 - 2000 Suns	200 - 2000 Suns
• Spectral Adjustability	6 Bands	6 Bands
• Type	Absorbing Filters	Dielectric Mirrors, Computer Controlled
• Range	± 14%	± 14%
• Pulse to Pulse Variation	< 1%	< 1%

SYSTEM COMPONENTS

ITEM	WIDTH	HEIGHT	LENGTH	WEIGHT
Lamphouse	20" (508mm)	25" (635mm)	10" (245mm)	100 lbs (46kg)
Pulse Forming Network (PFN)	21" (533mm)	48.5" (1,232mm)	72" (1,830mm)	1,500lbs (682kg)
Control Unit (w/Workstation Table)	30" (762mm)	51" (1,300mm)	84" (2,133mm)	200lbs (92kg)
Data Acquisition Unit (DAU)		Dependent upon Requirements		
Control Computer		Dependent upon Requirements		



Included Standard Equipment, not pictured:

- Pulse Forming Network (PFN)
- Control Unit
- Data Acquisition Unit (DAU)
- Control Computer

Contact Spectrolab Customer Service for price and availability.
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