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

SCIENCETECH
Making Light Work Better Since 1985

Applications

- Testing photovoltaic cell performance Photochemistry Photobiology
- Testing for color fading of paints and fabrics, etc.

Features

- Class AAA ASTM standard
- Fiberized output for flexible illumination
- Easy-to-use touchscreen controls
- Light intensity control available
- Up to 18 Suns intensity
- Remote control by PC
- Cost-effective for researchers

Lightline Fiberized Solar Simulators

MADE IN CANADA
FABRIQUÉ AU CANADA

TDB-22.90 v4.0.0

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Lightline Fiberized Solar Simulators

OVERVIEW

The Sciencetech LightLine series of fiberized solar simulators are a revolution in the solar simulator industry. With the LightLine you can direct the Class AAA solar light anywhere you wish with the standard 4 foot fiber. Classic designs for solar simulators require you to bring your sample to the solar simulator. Now you can bring the solar simulator to your sample. The LightLine solar simulators come standard with a touchscreen power supply, integrated shutter, and exposure controller.

The LightLine has one based model and three output optics configurations (custom output optic configurations are available). Configuration options exist for Class AAA illumination up to 50mm square and intensity up to 18 Suns.

The Sciencetech LightLine can match class A ASTM, IEC, and JIS solar simulator standards. A number of air mass filters are available for the Solar LightLine giving you the capability to customize the instrument for your requirements. In addition to spectral match filters you can also add intensity filters and other spectral filters like UV and IR blocking filters. Please see the accessories page for a full list of optional accessories.

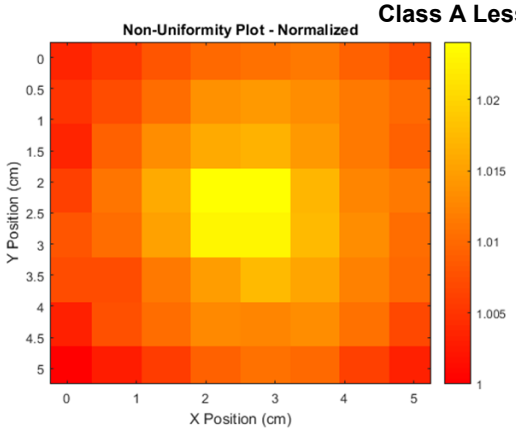
Model	Power Requirements	Classified Target Size (mm)	Sun Level	Working Distance (mm)	Classification
AX-LAN400	100-240VAC 6-3A	50 x 50	1 Sun	390 to 410	AAA
AX-LAN200		25 x 25	4 Suns	190 to 210	AAA
AX-LAN100		10 x 10	18 Suns	90 to 100	AAA

Class A spatial non-uniformity (NU):

The spatial uniformity was determined for a variety of output lenses (e.g. FL 400mm, 200mm, 100mm). The output lens also determines the working distance, target area, and irradiance at target.

Spatial non-uniformity was measured in accordance to ASTM E927-19 standards at an intensity of 1 sun or higher as specified. Validation performed measuring the short-circuit current of a silicon cell.

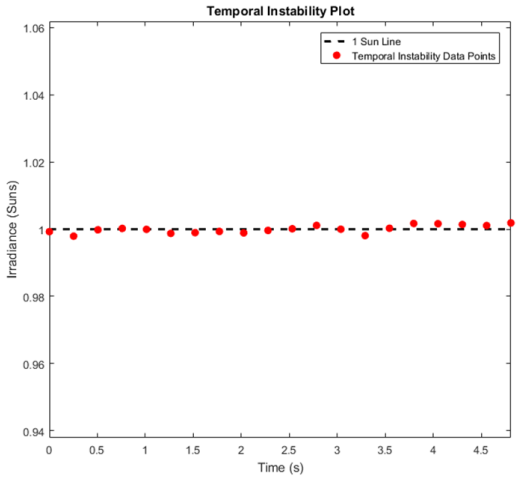
NU 1.2%; 50 x 50 mm
Class A Less than 2%



Class A Temporal Instability:

Temporal instability of irradiance was measured in accordance to ASTM E927-19 standards at an intensity of 1 sun. Validation performed measuring the short-circuit current of a silicon cell.

Temporal Instability 0.2%
Class A Less than 2%



Please note: Due to our continuous improvement system, all specifications are subject to change without notice. Lightline solar simulator specifications listed are according to ASTM E927-19.

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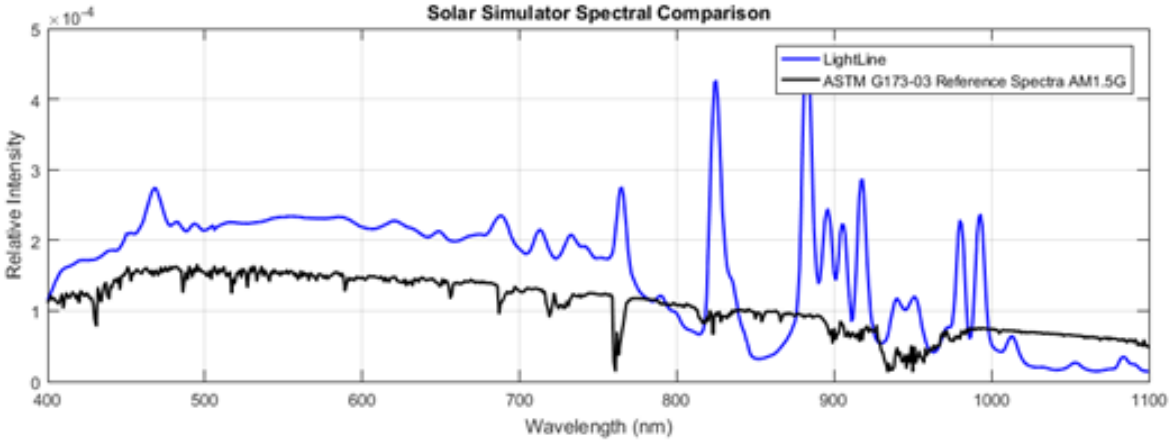
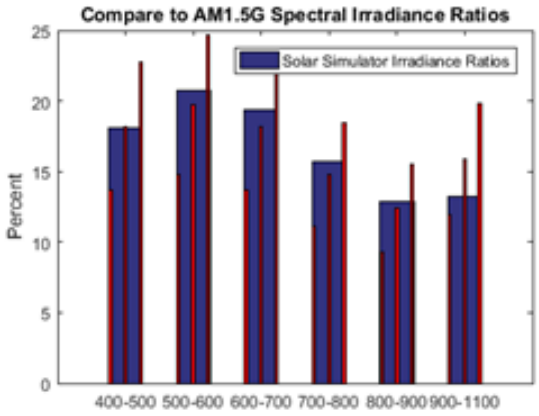
Lightline Fiberized Solar Simulators

CLASSIFICATION AAA

Class A Spectral Match Testing Report

The spectral measurement was performed with a stepping-monochromator and silicon photodiode detector using modulated light and sensitive lock-in amplifier in accordance to ASTM E927-19 standards. All testing results are for an example LightLine and individual reports will vary





Wavelength	Percentage	Class
'400-500'	'18.0987'	'A'
'500-600'	'20.7312'	'A'
'600-700'	'19.3796'	'A'
'700-800'	'15.6812'	'A'
'800-900'	'12.897'	'A'
'900-1100'	'13.2123'	'A'

Solar Simulator Standards

Sciencetech solar simulator specifications listed are according to ASTM E927-19 and IEC-60904-9 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 or JISC8904-9 2017 is required.

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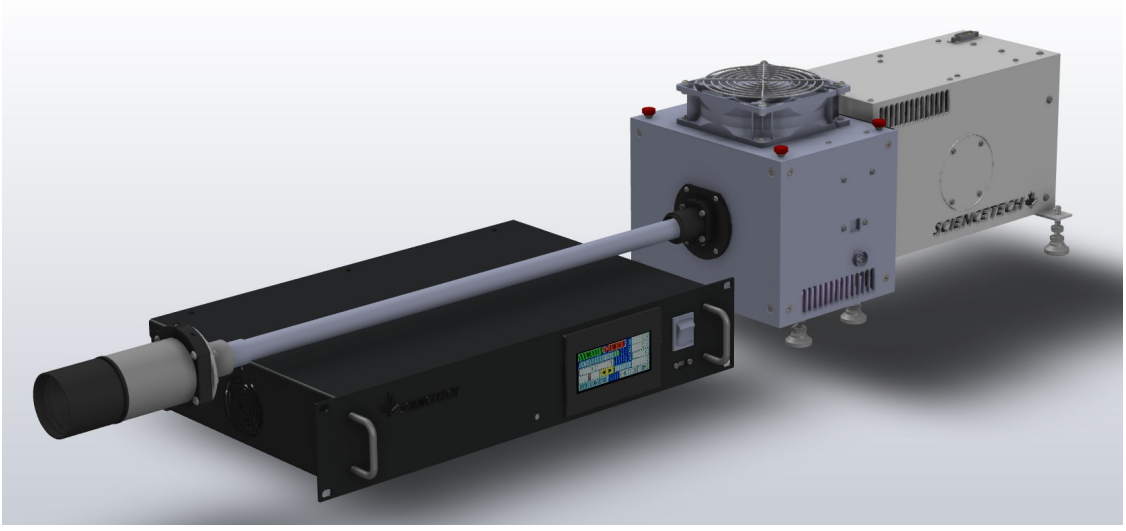
Lightline Fiberized Solar Simulators

SPECIFICATIONS

MODEL Part No.:	AX-LAN100 161-9034	AX-LAN200 161-9035	AX-LAN400 161-9036
Solar Simulator Type	Steady-State		
Test Plane Area (Target Size)	10x10 mm[1]	25x25 mm[1]	50x50 mm[1]
Sun Level	18 Suns	4 Suns	1 Sun
Classification	AAA	AAA	AAA
Wavelength Range	350 - 1800nm (Standard Spectral Match 400 - 1100nm)		
Spectral Match Classification	Class A. All intervals (0.75 < RSM* > 1.25). Different Spectral filters available.		
Spatial non-uniformity of Irradiance Classification	< 2% A	< 2% A	< 2% A
Temporal Instability of Irradiance Classification	< 2% A	< 2% A	< 2% A
Working Distance	90-110 mm	190-210 mm	390-410 mm
Air Mass Filter	AM1.5G[2], AM1.5D[2]		
Lamp	300W Xenon, 1000h (average) Lifetime, Forced Air Cooling		
Shutter	Integrated Touchscreen Control, 0 - 10000s, Adjustable Duty Cycle		
Fiber Bundle Length	1.22m (4') Standard		
Power Supply Model	601-300		
Input Voltage/Current	100-240VAC, 6A-3A		
Environment	Temperature 10-35°C , Humidity 20-80% , Avoid Condensation		
Dimension (LxWxH)	See Dimensions Page		
Weight	15kg		



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Lightline Fiberized Solar Simulators

POWER SUPPLY & SOFTWARE

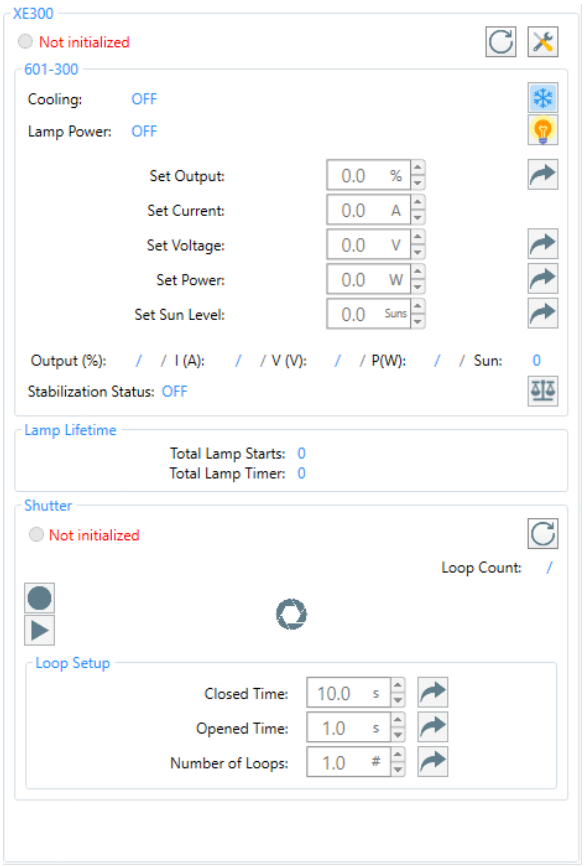
Power Supply and Software

Each Lightline solar simulator comes with a 601-series power supply.

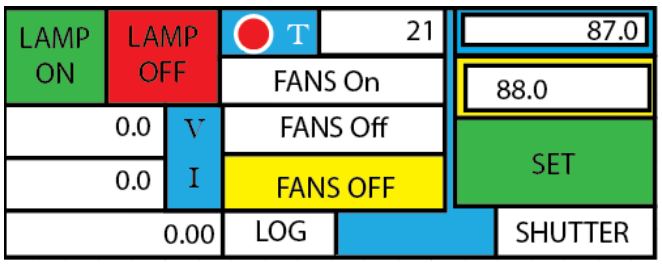
Standard features included with Sciencetech's 601– series power supplies:

- Touchscreen interface
- Shutter and exposure control
- Single connection for lamp power, cooling, and communication
- Lamp starts and timer log
- Fan cooling safety interlock
- RS232 software GUI included

601– series power supply



Software GUI for computer control

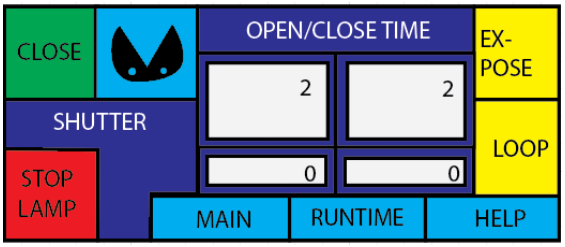


601-series touch screen power supply main control screen

Electronic Shutter Control

This shutter can be used with any high powered light source and can effectively block a 4" diameter beam.

This device is computer controlled through Sciencetech's line of Touch Screen power supplies



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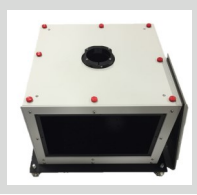
Lightline Fiberized Solar Simulators

ACCESSORIES



SAMPLE-CHAMBER SC-12 (130-9011)

A general-purpose sample chamber that can be configured in multiple ways to address a number of application requirements. The SC-12 includes 4 optical ports as well as a side door for easy access to the sample area.

STAND/FIBER PM-90 (100-8060)

A stand/fiber holder designed to hold the LightLine optical illumination delivery fiber. Fiber holder position is adjustable for vertical and horizontal illumination.

FILTER WHEEL—SFW (189-9012)

6 position filter wheel supporting up to six 25mm diameter filters

OPTICAL FIBER FB-0.5-8 (670-0103)

8 foot optical fiber upgrade to allow for further versatility with the LightLine. Please note that there will be a reduction in the power out-put with an 8 foot fiber.

FILTERS

Numerous filtering options are available with the Sciencetech Solar LightLine. The standard Solar LightLine comes with two filter slots.

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Lightline Fiberized Solar Simulators

ACCESSORIES

SOL-METER (125-9011)

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

SSIVT-REF (125-9007)

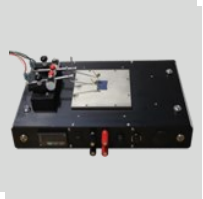
This silicon detector is designed to be used for monitoring and verifying the sun level of solar simulators.

SC-LT-Q (585-0154)

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

SSIVT-20C (175-9103)

20W IV Tester for Continuous Solar Simulators (current range = 1 A, voltage range = 200 V).



SCI-SCC3-TE (165-8202)

3.5" x 3.5" Solar Cell Chuck, TE Cooled, Computer controllable, Vacuum Ready.

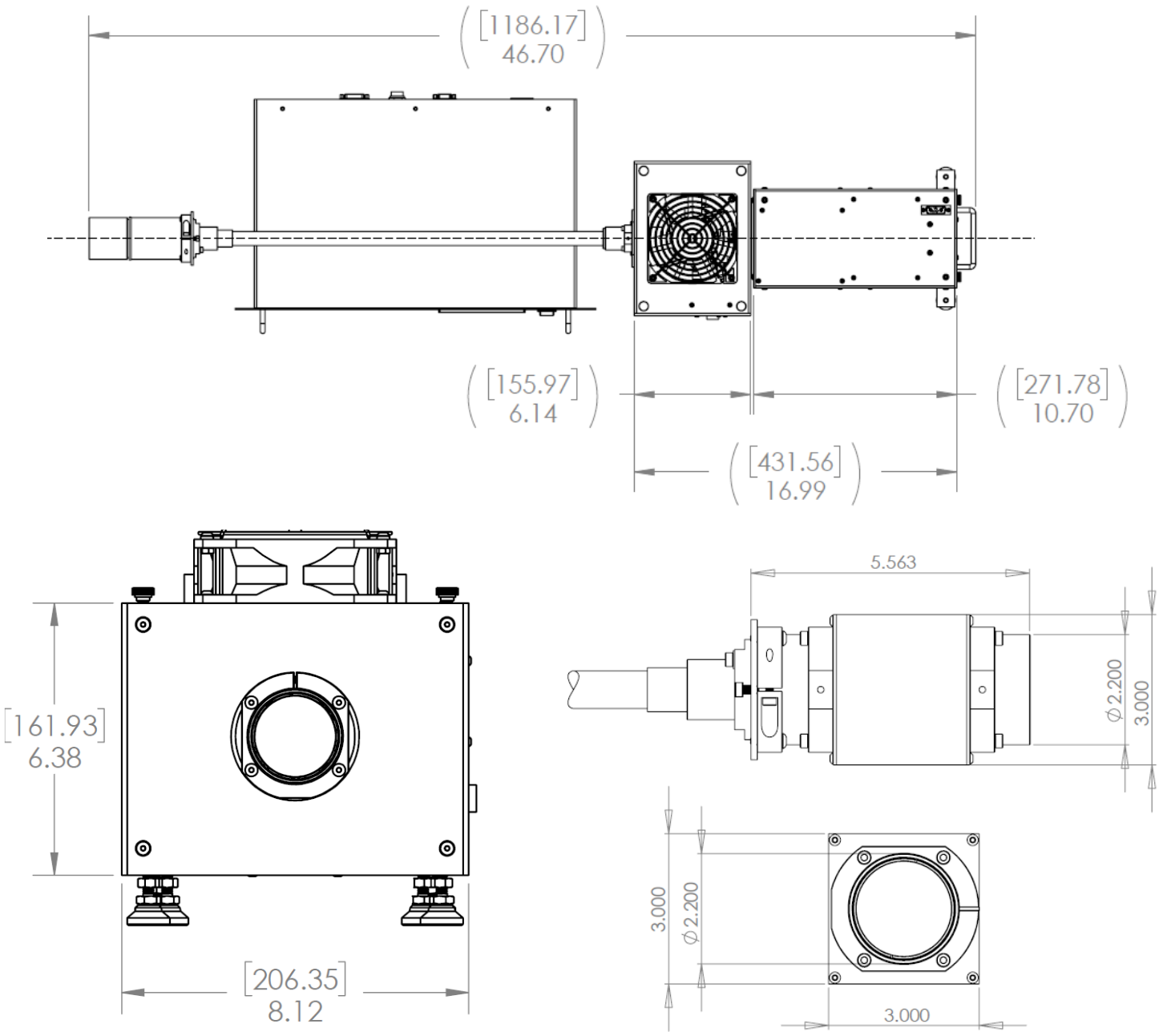
SCI-SCC3-L-B (165-8221)

3.5" x 3.5" Solar Cell Chuck, Liquid Cooled, Rear Contact.

Lightline Fiberized Solar Simulators

DIMENSIONS

Dimensions are in [mm] and inches.



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