

Solar Light's state of the art single output **LS1000-Series and 16S-Series Solar Simulators produce solar UV radiation** in the 290-400nm range, and can be quickly and easily configured by the user to provide UVA only, UVB only, UVA+B, or full spectrum sunlight optionally. Models are available from 150W / 0.8" (2 cm) to 1000W / 6" (15.25 cm) output. These precision research-grade instruments are specially designed for versatility in laboratory applications including photobiological studies, mutagenesis research, and UV biological experiments in compliance with the latest laboratory standards such as ASTM, IEC, and ISO. Our Turnkey Photobiology Testing Kits include the Simulator, Power Supply, Dual-Input Data Logging PMA2100 Radiometer, NIST-traceable PMA-Series UVA, UVA+B, and Photopic Sensors, safety glasses, and many other accessories so you can start testing instantly!



#### LS1000-Series

- > 95% Uniformity, with 98% Uniformity available in beam's central usable area
- Square Beam Models available in 4" (10 cm) and 6" (15.25 cm) single port outputs
- Collimated Output Provides up to 14" (35.5 cm) Working Distance

#### 16S-Series

- > 90% Uniformity in beam's usable area
- Round Beam Model available in 0.4" (1 cm) to 3" (7.5 cm) single port output
- Focused Output provides up to 18" (46 cm) working distance

#### Advantages

- Standard and Customizable Simulators validated to comply with FDA, ISO, and COLIPA Standards
- CE Compliant
- Prepackaged Kits include Dose Controller / Radiometer, NIST-traceable UVA Sensors, and all related accessories required for immediate testing
- Temperature rise of the sample is <0.2 °C.
- Custom-Designed Spectra available
- High performance fused silica optical components included
- Excellent long-term stability
- Easy to use Intensity and Uniformity Measurement System
- Automatic shutter with remote control connection Included
- High efficiency Switching Power Supply with adjustable output for variable lamp power included
- Optional Air Mass 0 and 1.5 Spectra from 250-2500nm available
- Optional Visible Light Only output available
- Optional Light Attenuation Screens available
- Optional Validation available



Compliant



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ISO 24443 Compliant



FDA In Vitro SPF



COLIPA Compliant



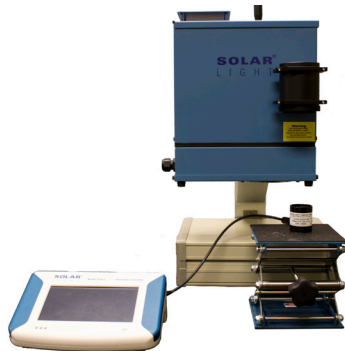
Boots Star Rated



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### Turnkey Kits For UV+VIS Irradiation

Our prepackaged kits combine these state of the art Solar Simulators with our innovative Automatic Dose Controllers, advanced Data Logging Radiometers, NIST-traceable Sensors, and other hardware to allow for instant testing right out of the crate.

**Solar Light's Turnkey Testing Kits include Simulators, Dose Controllers, Radiometers, Sensors, and Accessories so you can start testing instantly!**

Typical Kits Include:



**Sophisticated Data Logging Radiometers** function as light meters, photometers, and UV meters measuring UVA, UVB, UVC, Visible, and IR light. These meters feature graphic display, data logging, complex processing algorithms, selectable units of measure, averaging, tracking minima and maxima, dose integration and programmable alarm thresholds – all in a portable handheld device.



**Advanced NIST-Traceable Sensors** for accurate measurement of UVA, UVA+B, and Photopic Spectra – well over 130 models in both digital and analog configurations available.



**Laboratory Scissor Jacks** with 5.5"x5.5" (14cm x 14cm) surface allow for height adjustment from 2.75" to 10.25" (7cm to 26cm) for accurate specimen setup.



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ISO 24443 Compliant



FDA In Vitro SPF



COLIPA Compliant



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Round Beam Models				Square Beam Models		
SPECIFICATION	LS1000-2R-006	LS1000-4R-006	LS1000-6R-006	LS1000-2S-006	LS1000-4S-006	LS1000-6S-006
<b>Output Beam Size</b>	2" (5 cm) Round	4" (10 cm) Round	6" (15.25 cm) Round	2" (5 cm) Square	4" (10 cm) Square	6" (15.25 cm) Square
<b>Beam Orientation</b>	Vertical Downward, Vertical Upward, or Horizontal (for all models - please specify at order)					
<b>Lamp Type</b>	Xenon Short Arc (For All Models)			Xenon Short Arc (For All Models)		
<b>Lamp Wattage (Nominal)</b>	1000W (For All Models)			1000W (For All Models)		
<b>Beam Uniformity</b>	±5% (For All Models)			±5% (For All Models)		
<b>Collimation</b>	±1.5-3 Degree Half Angle (For All Models)			±1.5-3 Degree Half Angle (For All Models)		
<b>Spectral Match Classification</b>	A (IEC 60904-9 2007)			A (IEC 60904-9 2007)		
	A (JIS C 8912)			A (JIS C 8912)		
	A (ASTM E927 - 05)			A (ASTM E927 - 05)		
<b>Temporal Instability Classification</b>	A (IEC 60904-9 2007)			A (IEC 60904-9 2007)		
	A (JIS C 8912)			A (JIS C 8912)		
	A (ASTM E927 - 05)			A (ASTM E927 - 05)		
<b>Uniformity Classification</b>	A (IEC 60904-9 2007)	B (IEC 60904-9 2007)		A (IEC 60904-9 2007)	B (IEC 60904-9 2007)	
	A (JIS C 8912)	B (JIS C 8912)		A (JIS C 8912)	B (JIS C 8912)	
	A (ASTM E927 - 05)	B (ASTM E927 - 05)		A (ASTM E927 - 05)	B (ASTM E927 - 05)	
<b>Light Ripple</b>	< ±2% rms			< ±2% rms		
<b>Working Distance</b>	5.0" ±2.0" (12.7 cm +/- 5.2 cm)			5.0" ±2.0" (12.7 cm +/- 5.2 cm)		
<b>Long Term Drift (&lt;4 Hours)</b>	<0.1%			<0.1%		
<b>Line Regulation</b>	<0.2% of maximum output current			<0.2% of maximum output current		
<b>Current Regulation</b>	<0.5% of maximum output current			<0.5% of maximum output current		
<b>Current Ripple</b>	<0.5% of maximum output current			<0.5% of maximum output current		
<b>Power Limit</b>	Factory Set Limit is 1,500 watts max			Factory Set Limit is 1,500 watts max		
<b>Operating Temperature</b>	32°F to 95°F / 0°C to 35°C			32°F to 104°F / 0°C to +40°C		
<b>Storage Temperature</b>	-4°F to 185°F / -20°C to +85°C			-4°F to 185°F / -20°C to +85°C		
<b>Humidity</b>	0 to 95% non-condensing			0 to 95% non-condensing		
<b>Cooling</b>	Forced air			Forced air		
<b>Medical Safety Certifications</b>	EN61010-1 Laboratory, EN60335 Appliances, IEC60601-1 Medical (XPS-Series Power Supply also includes UL60601-1, EN 60601-1, and CAN/CSA C22.2 No. 601.1-M90)					
<b>EMI/EMC</b>	EN55011 Emissions, IEC60601-1-2:2001, 2nd Rev 2 Medical, IEC61000-3-2 Harmonic, IEC61000-3-3 Flicker, IEC61000-4-2 ESD, IEC61000-4-3 Radiated, IEC61000-4-4 EFT, IEC61000-4-5 Surge, IEC61000-4-6 Conducted, IEC61000-4-11 Voltage Dip, IEC61000-4-8 Magnetic Field (XPS-Series Power Supply also includes FCC 47 CFR Class A Emissions and EN55011:1998 Group 1 Class A Emissions)					
<b>Weight</b>	40 lbs. (18.2 kg.)	40 lbs. (18.2 kg.)	45 lbs. (20.5 kg.)	40 lbs. (18.2 kg.)	40 lbs. (18.2 kg.)	45 lbs. (20.5 kg.)
<b>Reference Cell</b>	Calibrated (Optional on all models)			Calibrated (Optional on all models)		

Part Number: 210066

Revision Level: B

Specifications subject to change without notice.

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16S-Series 150W Models				16S-Series 300W Models			
SPECIFICATION	16S-150-0.4-006	16S-150-0.8-006	16S-150-1.2-006	16S-300-0.8-006	16S-300-1.2-006	16S-300-2.2-006	16S-300-3-006
<b>Output Beam Size</b>	0.4" (1 cm)	0.8" (2 cm)	1.2" (3 cm)	0.8" (2 cm)	1.2" (3 cm)	2.2" (5.7 cm)	3" (7.5 cm)
<b>Beam Orientation</b>	Vertical Downward, Vertical Upward, or Horizontal (for all models - please specify at order)						
<b>Lamp Type</b>	Xenon Short Arc (For All Models)			Xenon Short Arc (For All Models)			
<b>Lamp Wattage (Nominal)</b>	150W (For All Models)			300W (For All Models)			
<b>Beam Uniformity</b>	±5% (For All Models)			±5% (For All Models)			
<b>Spectral Match Classification</b>	A (IEC 60904-9 2007)			A (IEC 60904-9 2007)			
	A (JIS C 8912)			A (JIS C 8912)			
	A (ASTM E927 - 05)			A (ASTM E927 - 05)			
<b>Temporal Instability Classification</b>	A (IEC 60904-9 2007)			A (IEC 60904-9 2007)			
	A (JIS C 8912)			A (JIS C 8912)			
	A (ASTM E927 - 05)			A (ASTM E927 - 05)			
<b>Uniformity Classification</b>	B (IEC 60904-9 2007)			B (IEC 60904-9 2007)			
	B (JIS C 8912)			B (JIS C 8912)			
	B (ASTM E927 - 05)			B (ASTM E927 - 05)			
<b>Light Ripple</b>	< ±2% rms			< ±2% rms			
<b>Horizontal Beam Working Distance</b>	3" (7.6 cm)	7.1" (18 cm)	11.8" (30 cm)	5.9" (15 cm)	7.1" (18 cm)	18.5" (47 cm)	n/a
<b>Vertical Beam Working Distance</b>	n/a	2.4" (6 cm)	3.9" (10 cm)	2.4" (6 cm)	3.9" (10 cm)	18.1" (46 cm)	18.5" (47 cm)
<b>Long Term Drift (&lt;4 Hours)</b>	<0.1%			<0.1%			
<b>Power Limit</b>	Factory Set Limit is 150 watts max			Factory Set Limit is 320 watts max			
<b>Operating Temperature</b>	32°F to 95°F / 0°C to 35°C			32°F to 104°F / 0°C to +40°C			
<b>Storage Temperature</b>	-4°F to 185°F / -20°C to +85°C			-4°F to 185°F / -20°C to +85°C			
<b>Humidity</b>	0 to 95% non-condensing			0 to 95% non-condensing			
<b>Cooling</b>	Forced air			Forced air			
<b>Medical Safety Certifications</b>	EN61010-1 Laboratory, EN60335 Appliances, IEC60601-1 Medical						
<b>EMI/EMC</b>	EN55011 Emissions, IEC60601-1-2:2001, 2nd Rev 2 Medical, IEC61000-3-2 Harmonic, IEC61000-3-3 Flicker, IEC61000-4-2 ESD, IEC61000-4-3 Radiated, IEC61000-4-4 EFT, IEC61000-4-5 Surge, IEC61000-4-6 Conducted, IEC61000-4-11 Voltage Dip, IEC61000-4-8 Magnetic Field						
<b>Weight</b>	7 lbs (3.2kg)	7 lbs (3.2kg)	7 lbs (3.2kg)	10.5 lbs (4.8kg)	10.5 lbs (4.8kg)	10.5 lbs (4.8kg)	10.5 lbs (4.8kg)

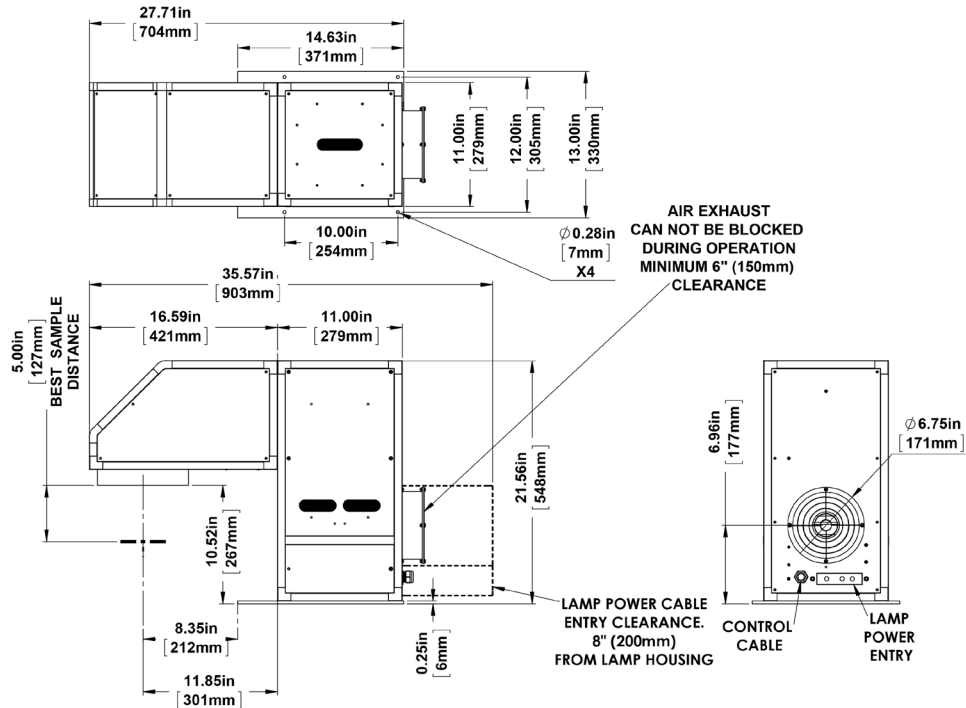
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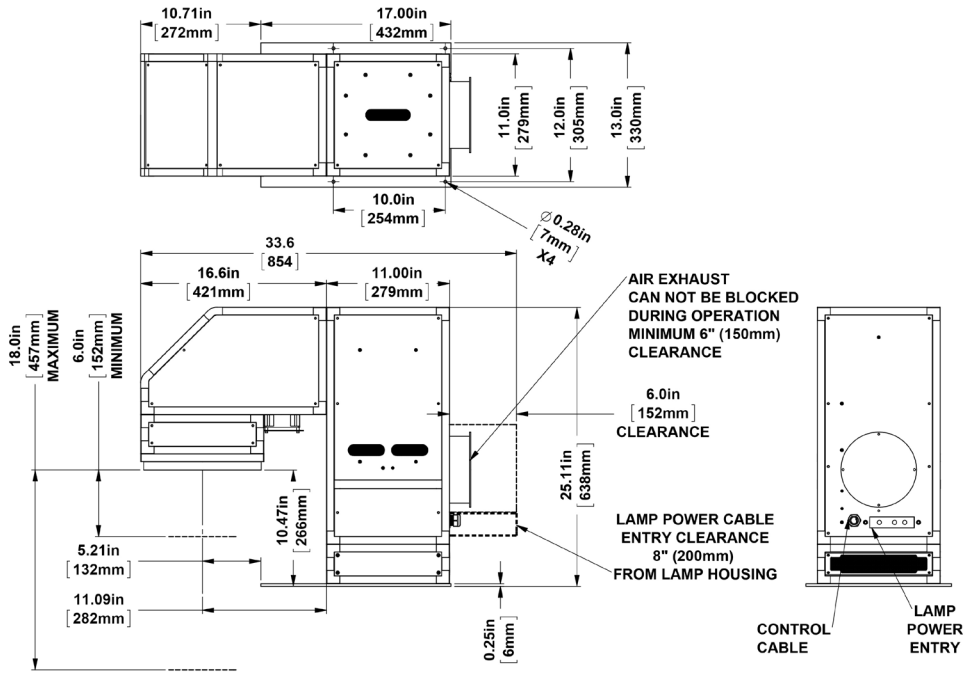
**Custom beam sizes and configurations available - please consult factory for details.**

Specifications subject to change without notice.

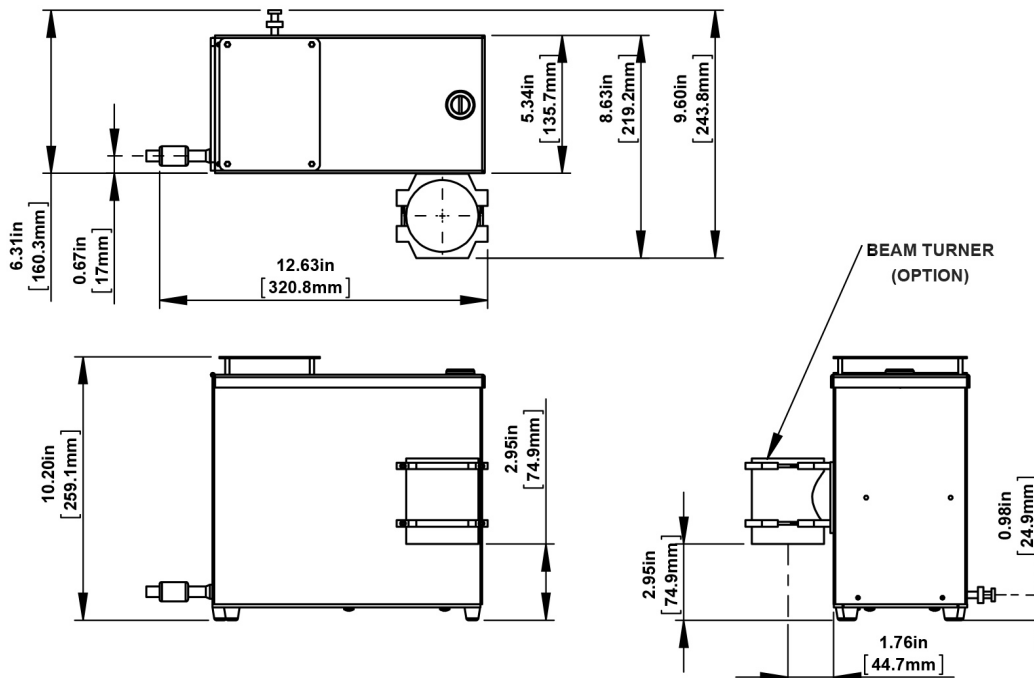
### LS1000-Series 2 Inch (5 cm) and 4 Inch (10 cm) Round and Square Beam Solar Simulator Outline Drawing LS1000-Series 6 Inch (15.25 cm) Round Beam Only Solar Simulator Outline Drawing



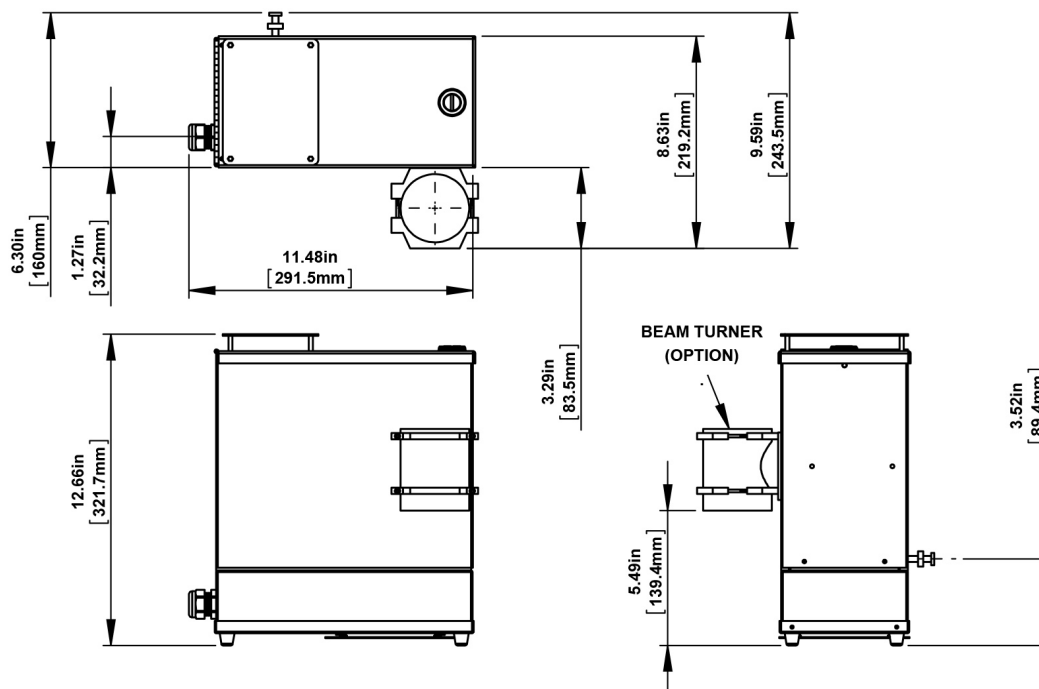
### LS1000-Series 6 Inch (15.25 cm) Square Beam Only Solar Simulator Outline Drawing



### 16S-Series 150W Solar Simulator Outline Drawing



### 16S-Series 300W Solar Simulator Outline Drawing





Since 1967, Solar Light Company, LLC has been recognized worldwide as America's premier manufacturer of Precision Solar Simulators and Light Sources, Light Measurement Instrumentation, UV Transmittance Analyzers, Meteorological Instrumentation, and Digital and Analog Sensors. Our advanced line of UV, visible, and IR radiometers and light meters measure laboratory, industrial, environmental, and health related light levels with NIST traceable accuracy. Column ozone, aerosol, and water vapor thickness measurements, in addition to long-term global ultraviolet radiation studies all over the world are performed using our atmospheric line of instrumentation. Solar Light also provides NIST traceable spectroradiometric analyses, calibrations for light meters and light sources, accelerated ultraviolet radiation degradation testing of materials, and OEM instrumentation and monitors. Please visit our website for more details, specifications, and pictures!



**State Of The Art Solar Simulators** available in 150-1000+ watt UV or AM variations for a variety of applications including PV Cell Testing, Materials Testing, Pre-Irradiation for In Vitro Broad Spectrum Sunscreen Testing, SPF Testing, and much more.



**Multi-Functional Professional Grade Radiometers** available with and without data logging, and compatible with over 130 Solar Light PMA-Series Sensors to measure UV, Visible and IR wavelengths. Specialty Meters also available to measure UV Radiation, SUV/UVA, Scotopic/Photopic Spectra, and much more.



**Advanced NIST-Traceable Sensors** for accurate measurement of UVA, UVB, UVA+B, UVC, Visible, IR, Photostability, Temperature, and Custom Wavelength – well over 130 models in both digital and analog configurations, all compatible with our Radiometers.



**Ultraviolet Transmittance Analyzers** available as complete integrated turnkey systems to meet the latest ISO24443 requirements.



**Handheld Ozonometers and Sunphotometers** for fast and dependable Column Ozone, Aerosol, and Water Vapor Thickness measurements, in addition to long-term global ultraviolet radiation studies.



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