

Solar Light Company, LLC has been the foremost name in light sciences since we invented the world's first Solar Simulator in 1967. Our state-of-the-art 1000W single output **LS1000-Series Solar Simulators** produce solar UV radiation in the 290-400nm range with UVA only and UVB only options. These precision research-grade instruments are specifically designed to comply with laboratory standards such as ASTM, IEC, and ISO. LS1000-Series simulators can reliably produce UV levels several times stronger than tropical sun, without any of the associated heat load, which is ideal for measuring the damaging effects of UV during materials testing.



### Features and Benefits

- > 95% Uniformity, with 98% Uniformity Available In Beam's Central Usable Area
- Collimated Output Provides up to 14" (35.5 cm) Working Distance
- Standard and Customizable Simulators Validated to Comply with ASTM, IEC, and ISO Standards
- CE Compliant
- Custom-Designed Spectrums Available
- High Performance Fused Silica Optical Components for Collimation and Uniformity Included
- Excellent Long-Term Stability
- Easy to Use Intensity and Uniformity Measurement System
- Automatic Shutter With Remote Control Connection Included
- 1000 Watt Xenon Arc Lamp Included
- High Efficiency Switching Power Supply with Adjustable Output for Variable Lamp Power Included
- Round Beam Models available in 2" (5 cm), 4" (10 cm), and 6" (15 cm)
- Square Beam Models available in 2" (5 cm), 4" (10 cm), and 6" (15 cm)
- Beam Orientation Can Be Specified As Vertical Downward, Vertical Upward, or Horizontal
- Optional Filters Allow for User Changeable Spectra (UVA only and UVB only)
- Optional Visible Light Only Output Available
- Optional Light Attenuation Screens Available
- Optional Validation Available



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

### Turnkey Kits Available For Various Applications

Prepackaged kits are available direct from the factory, which combine these state-of-the-art LS1000-Series Solar Simulators with our innovative Automatic Dose Controllers, advanced Data Logging Radiometers, NIST-traceable Sensors, and other hardware to form complete turnkey solutions for the most popular applications, including:

- PV Cell Testing
- Fade and Color Fastness Testing
- Materials Testing
- Academic Research
- General Purpose Irradiation



**Sophisticated Automatic Dose Controllers** measure the spectral response following the Erythema Action Spectrum and UVA Spectrum to allow accurate dose control when measuring SPF values. The 7-inch (17.8 cm) touch sensitive screen allows the user to follow intuitive menus and makes it quick and easy to set control parameters.



**Professional Grade Radiometers** provide multi-functional data logging capability, and compatibility 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 biologically-weighted SUV as required for FDA compliance and UVA as required for ISO testing. Over 130 different sensor models available for custom configurations.



**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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Round Beam Models				Square Beam Models		
SPECIFICATION	LS1000-2R-UV	LS1000-4R-UV	LS1000-6R-UV	LS1000-2S-UV	LS1000-4S-UV	LS1000-6S-UV
<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)					

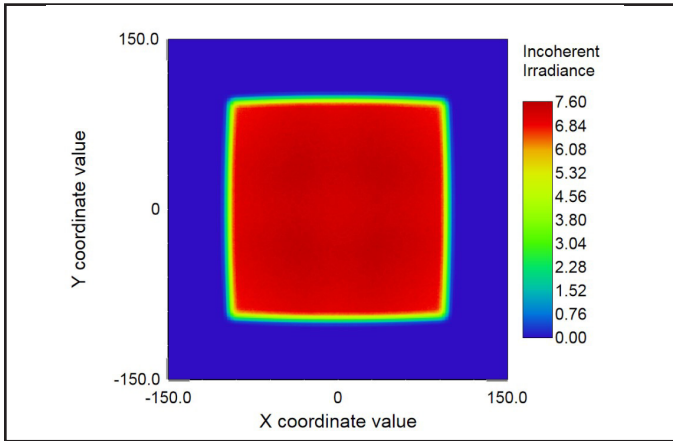
Part Number: 210076

Revision Level: E

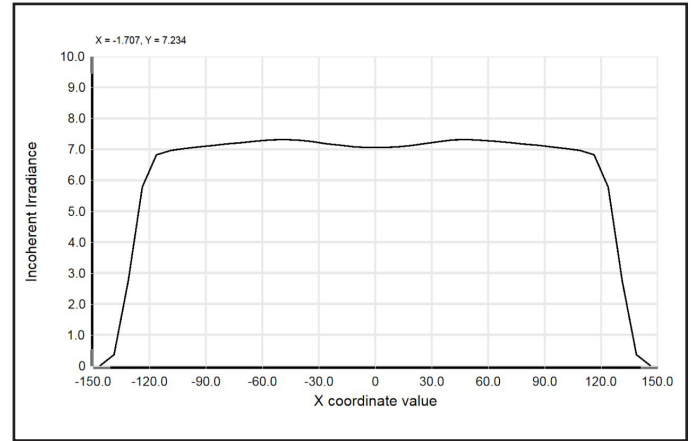
Specifications subject to change without notice.

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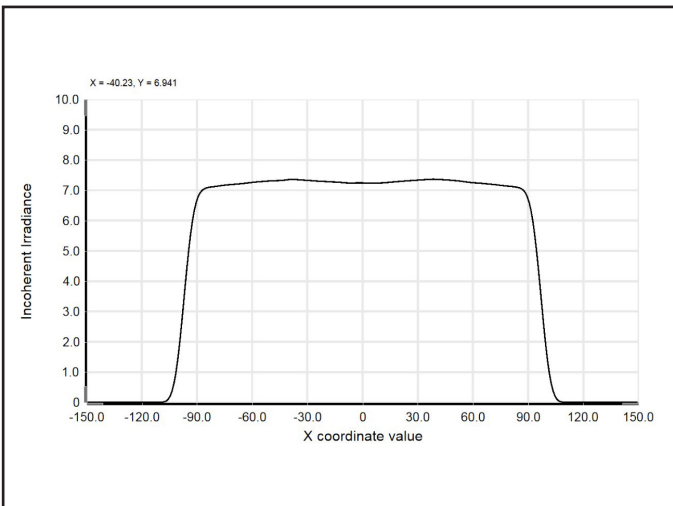
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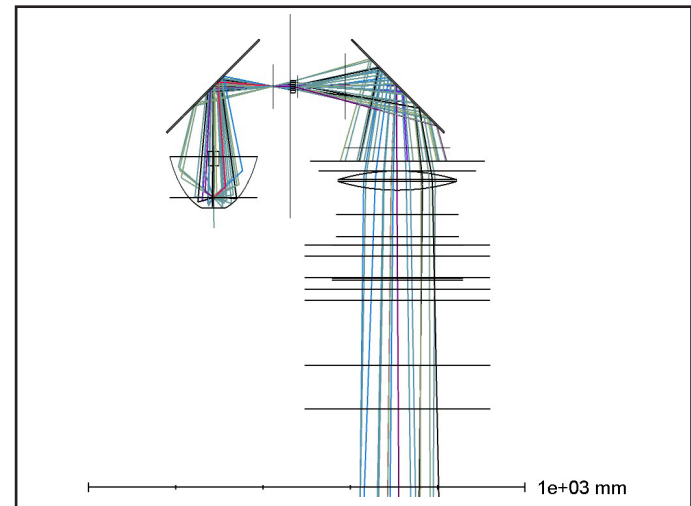
Typical LS1000 False Color Irradiance Map (250mm working distance)



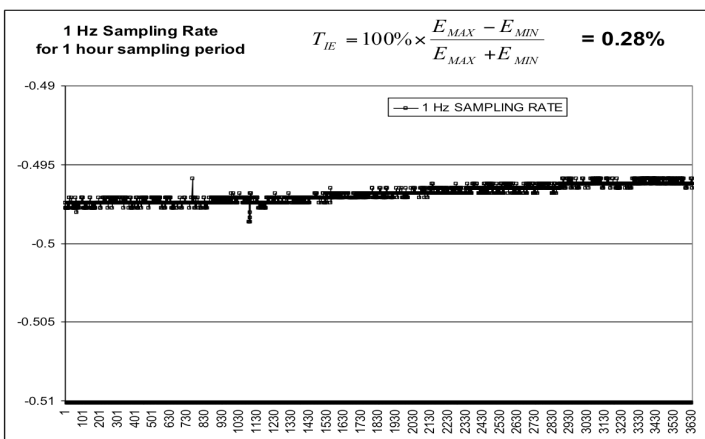
Typical LS1000 Corner To Corner Irradiance Line Profile



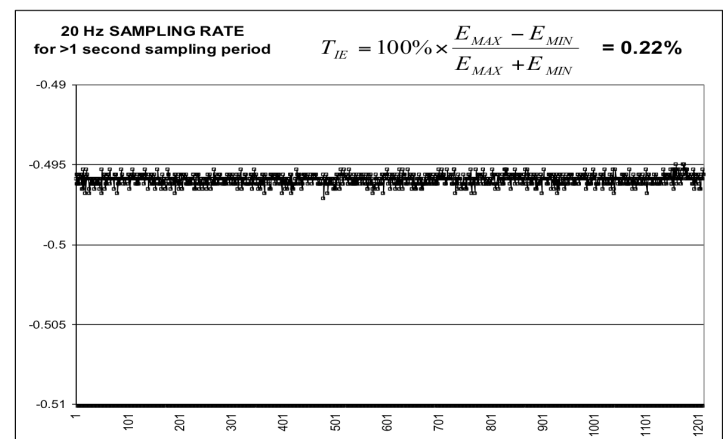
Typical LS1000 Center Column Irradiance Line Profile



Typical LS1000 System Ray Diagram (250mm working distance)



Typical LS1000 Simulator Short-Term Drift



Typical LS1000 Simulator Long-Term Drift



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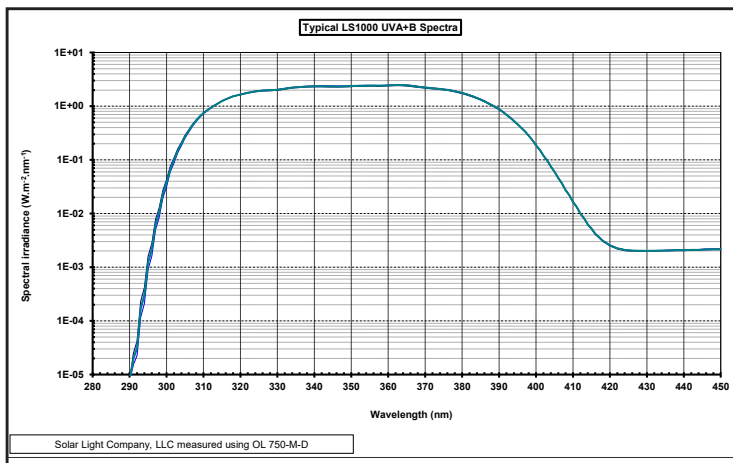
# SOLAR<sup>®</sup> LIGHT

**MONADERM**

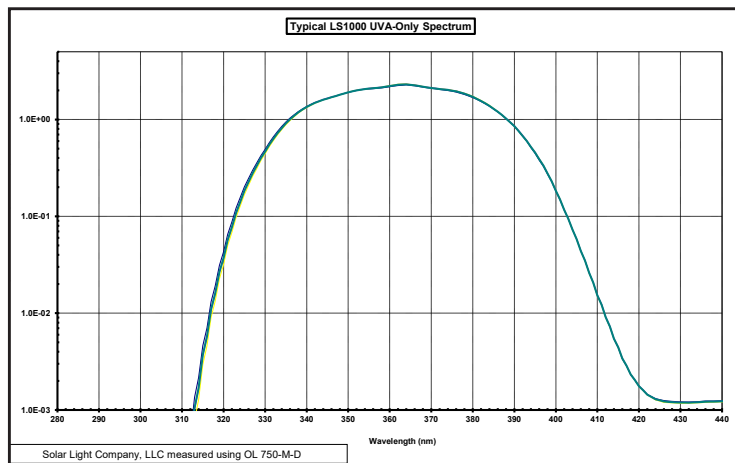
5, rue des Violettes  
98000 MONACO  
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## LS1000-Series 1000W UV Solar Simulators

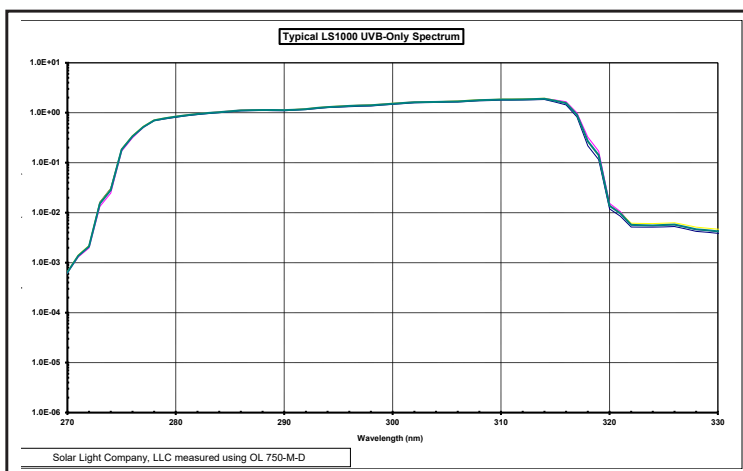
Large Area / High Throughput UV Simulator



*UVA+B spectrum is standard.*



*Optional UVA spectrum shown.*



*Optional UVB spectrum shown.*



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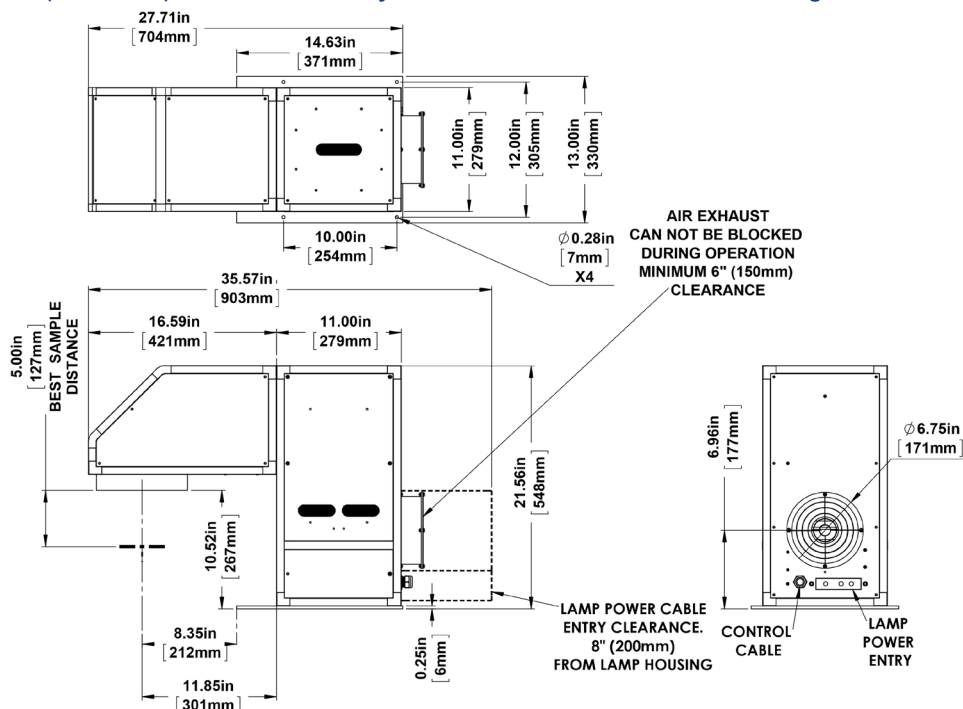


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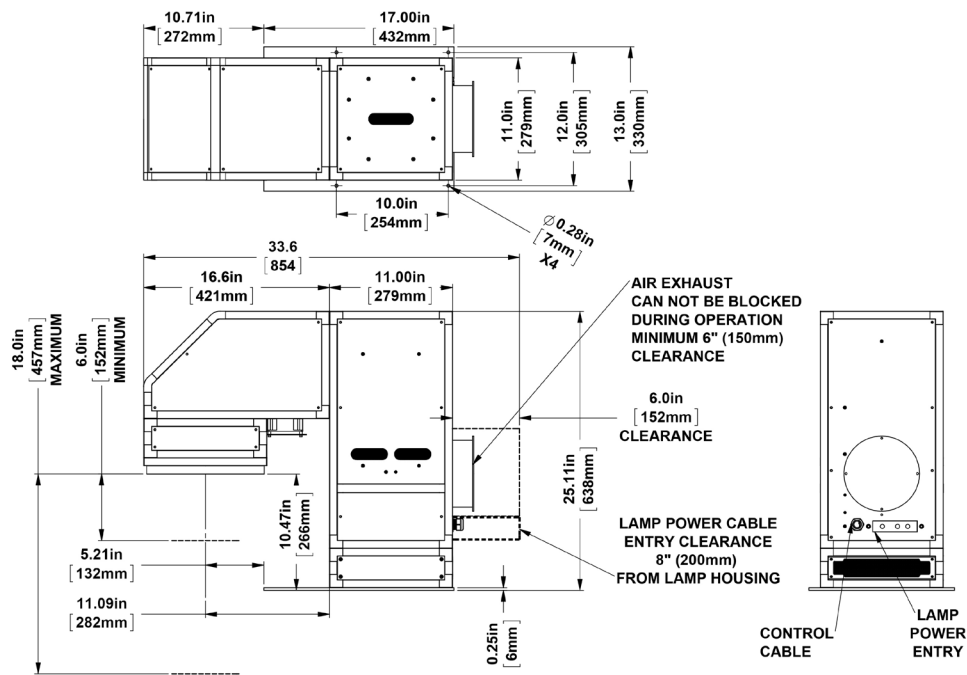


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### LS1000-Series 2 Inch (5 cm) and 4 Inch (10 cm) Round and Square Beam UV Solar Simulator Outline Drawing LS1000-Series 6 Inch (15.25 cm) Round Beam Only UV Solar Simulator Outline Drawing



### LS1000-Series 6 Inch (15.25 cm) Square Beam Only UV 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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