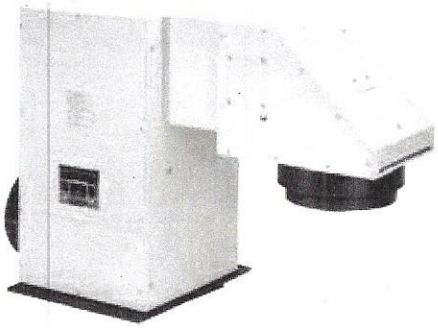
450 - 1000 W Oriel Solar Simulators



1000 W Solar Simulator

- Very high intensity sources closely match solar spectra
- Run tests when you want to, without concern for weather conditions and time of day
- Highly collimated, large area output beam (up to 12 x 12 inches)
- Various beam configurations are possible

Simulate hours of solar radiation in minutes with our 450 W and 1000 W Solar Simulators. We offer models with uniform, collimated output beams in sizes from 2x2 to 8x8 inches, and a diverging beam model, which produces a diverging output beam up to 12 x 12 inches.

We offer two families of simulators. The Full Spectrum models, when used with air mass and/or bandpass filters, simulate a variety of solar spectra. The UV Solar Simulators closely match the UV portion of the solar spectrum, with little VIS and IR.

Full Spectrum Solar Simulators

Fig. 1 shows the spectral output of these simulators compared to the UV models. When used with our easily interchangeable air mass filters, these sources simulate a variety of solar spectra. Tables 1 and 2 show the typical output of these simulators, in the design-irradiated plane. In addition to the collimated beam sizes offered, we also have a Full Spectrum Solar Simulator with diverging beam. This source, model 91190, produces a diverging output beam up to 12 x 12 inches.

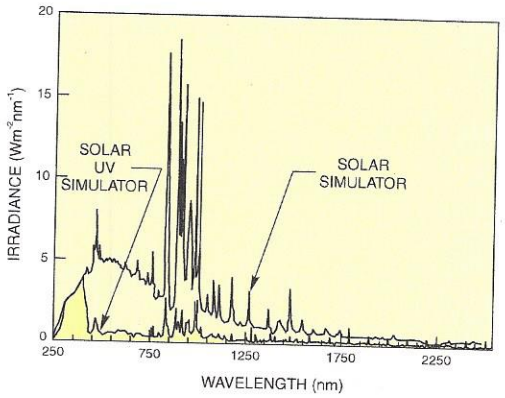


Fig. 1 Spectral output of full spectrum kW Solar Simulator compared to the output of a kW UV Solar Simulator.

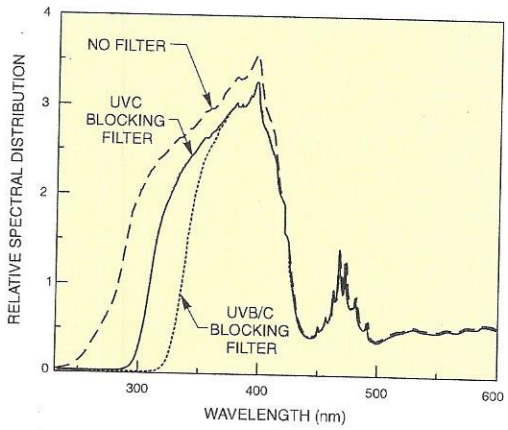


Fig. 2 Spectral output of 91292 UV Solar Simulator with various bandpass filters.

Table 1 Typical Output of 1000 W Full Spectrum Solar Simulators

With This Optional Air Mass Filter	Typical Output ($W m^{-2}$)							
	2 x 2 Inch		4 x 4 Inch		6 x 6 Inch		8 x 8 Inch	
	250 - 2500 nm	250 - 1100 nm	250 - 2500 nm	250 - 1100 nm	250 - 2500 nm	250 - 1100 nm	250 - 2500 nm	250 - 1100 nm
AM 1 Direct	11475	8160	3060	2175	1400	1000	850	600
AM 1.5 Direct	10360	7350	2765	1960	1270	900	760	540
AM 2 Direct	9750	6800	2600	1820	1200	840	720	500
AM 1.5 Global	7150	6110	1910	1630	875	750	525	450
AM 0	13406	9800	3575	2640	1640	1200	980	715
Unfiltered Irradiance	17120	13700	4565	3650	2100	1680	1250	1000

Table 2 Typical Output of 91291 UV Solar Simulator

With These Optional UV Filters	Typical Output ($W m^{-2}$)		
	UVC, Below 280 nm	UVB, 280 - 320 nm	UVA, 320 - 400 nm
Atmospheric Attenuation Filter	0	37	800
Atmospheric Attenuation Filter + VIS-IR Bandpass Blocking Filter	0	31	508
UVC Blocking Filter	0	109	818
UVB/C Blocking Filter	0	0.33	643
Unfiltered Irradiance	54	284	885

What Makes Up a Solar Simulator?

The Illuminator Housing

The illuminator housing holds the arc lamp, arc lamp ignitor, optical integrator, collimating optics, light shutter, and light shutter power supply. It is equipped with a safety interlock and a thermal interlock system to ensure operator and system safety. An integral fan and filter blower provides forced air-cooling to ensure optimal lamp, optics and housing temperature.

450 W or 1000 W Xenon Arc Lamp

Both families of the Solar Simulators use an ozone free lamp, which has negligible output below 260 nm. If you need the deep UV wavelengths, choose the 6269 UV Enhanced Lamp. Notify us at the time of purchase, if you'd like to substitute the 6269 Lamp for the 6271Ozone Free Model.

Power Supply

The highly regulated power supply provides constant electrical power to the xenon lamp. A convenient preview feature enables you to set the lamp power prior to ignition. This reduces set up time, since there is no need to wait through the lamp's warm-up period to establish the operating power.

UVB/UVA Dichroic Mirror (For UV Solar Simulators Only)

For the UV Solar Simulators we replace the aluminized mirror with a dichroic, which passes 280 to 400 nm and greatly reduces the VIS and IR. You can use UV blocking filters after the dichroic, such as the 81017 Atmospheric Attenuation Filter, which simulates the UV edge of the sun.

Manual or Automated Exposure Control

Our Solar Simulators include an electronic splitblade shutter. You can externally control this shutter from the Digital Control Panel on the illuminator housing, or via a hand held switch, contact closure, or logic level input. For automated exposure control, order the 68945 Digital Timer (see page 208).

Certification

These systems meet Class B IEC 904-9 requirements, but do not come certified.

Safety Considerations

These illuminators produce very high intensity ultraviolet radiation. A face shield, gloves and protective clothing must be worn at all times during operation, see page 246 for UV safety equipment.

Specifications

Wattage	450 W or 1000 W
Lamp Type	Xenon short arc
Beam Uniformity	±5 %
Light Ripple	<1 % r.m.s.
Solar Simulator Input	95-132 V AC/10, 50/60 Hz 190 - 264 V AC/5A, 50/60 Hz
Line Regulation	0.01 %

Ordering Information

Solar Simulators

Please specify upward, downward or sideways beam configuration, when ordering.

Simulator Type	Beam Size inch (mm)	Collimation	Model
Full Spectrum Solar Simulator	2 x 2 (51 x 51) (1 kW)	±6°	91191
	4 x 4 (102 x 102) (450 kW)	±4°	91195
	4 x 4 (102 x 102) (1 kW)	±4°	91192
	6 x 6 (152 x 152) (1 kW)	±3°	91193
	8 x 8 (203 x 203) (1 kW)	±2°	91194
	Diverging up to 12 x 12 (305 x 305) (1 kW)		91190
UV Solar Simulator	2 x 2 (51 x 51) (1 kW)	±6°	91291
	4 x 4 (102 x 102) (1 kW)	±4°	91292
	6 x 6 (152 x 152) (1 kW)	±3°	91293
	8 x 8 (203 x 203) (1 kW)	±2°	91294

Replacement Lamps

Model	Description
6266	450 W Xenon, OF
6271	1000 W Xenon, OF
6269	1000 W Xenon, UV Enhanced

Accessories

Model	Description
92000	Extended Care Program
68955	Remote Switch

WEB *See our website for more info*