

150 W Low Cost Solar Simulator



96000 150 W Solar Simulator with Bifurcated Bundle.

The 96000 is intended for the researcher who needs to closely simulate the sun's spectra, but doesn't need the high output of our 300 to 1600 W Solar Simulators. The 96000 uses a 150 W ozone free xenon lamp, and produces a 1.3-inch (33 mm) diameter collimated beam. Optional air mass and bandpass filters can be added to re-shape the spectral output.

What Makes Up a 96000 150 W Solar Simulator?

The Illuminator Housing

The housing includes a rear reflector to collect the back radiation from the lamp, a fan, ignitor, an F/1 condensing lens assembly, and a filter holder.

150 W Xenon Arc Lamp

The 96000 Simulator includes a 150 W ozone free xenon lamp. For output below 260 nm, replace this lamp with the 6254 UV enhanced model. Notify a Sales Engineer at time of purchase, if you wish to replace the lamp.

The Power Supply

The power supply delivers constant power to the lamp, a real advantage over voltage controlled power sources since the low wattage arc lamps have a very narrow power tolerance.

The Multiple Filter Holder

The 96000 Solar Simulator includes an air mass filter holder, which mounts on the output of the housing's condenser. You can insert and remove the filters without breaking down your system. Note: the blocking and atmospheric attenuation filters (models 59450, 81095 and 81096) may crack if the lamp output is not attenuated. We suggest that you place these filters after a dichroic filter assembly (see page 229) or 1.5-Inch Series Water (see page 238). The Solar Simulator's filter holder can be placed at the output of either of these optical assemblies (See Fig. 2).

- Low cost alternative for low power applications
- 1.3-inch diameter collimated output beam
- Small arc size allows you to focus image onto fiber optic or liquid light guide
- Optional Air Mass Filters, Dichroic Mirrors, and Bandpass Filters let you shape the output spectrum

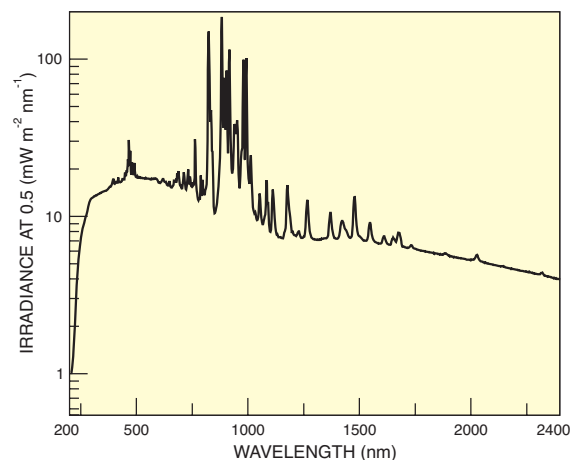


Fig. 1 Spectral output of 150 W lamp used in Solar Simulator.

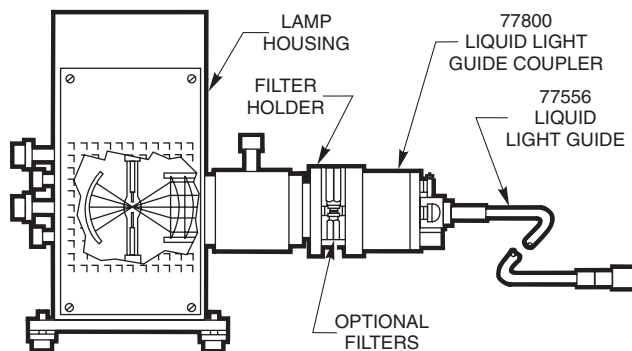


Fig. 2 96000 Solar Simulator with optional fiber coupler and light guide

Output Power

Table 1 lists the approximate power in the output beam of the 96000 Solar Simulator (before filtering). We offer formulae and examples for calculating the output power for this lamp housing type (see page 69). The multiplication factor for the condenser on this illuminator is 0.11.

Table 1 Approximate Output Power from 96000 Solar Simulator

Wavelength Range (nm)	Approximate Power in 1.3 inch (33 mm) Diameter Output Beam (mW)
230 - 280	11.5
280 - 320	27.0
320 - 400	85.0
400 - 700	430.0

Optional Filters

To simulate various solar conditions, we offer air mass filters. These 2.0 inch (51 mm) filters fit into the Solar Simulator's filter holder. If you want to block a selected region of the UV, and/or completely block or reduce the VIS and IR, use a bandpass filter or dichroic mirror. These mount in the 66245 Dichroic Mirror Holder.

Safety Considerations

These sources emit dangerous levels of UV radiation, harmful to the eyes and skin. Always wear protective eyewear, clothing, and gloves when working around UV sources.

Specifications

Wattage	150 W
Lamp Type	Xenon short arc
Collimated Output Diameter	(33 mm)
Light Ripple	<0.5 % r.m.s.
Solar Simulator Input	95 - 264 VAC, 4A, 47 - 63 Hz
Line Regulation	0.01 %

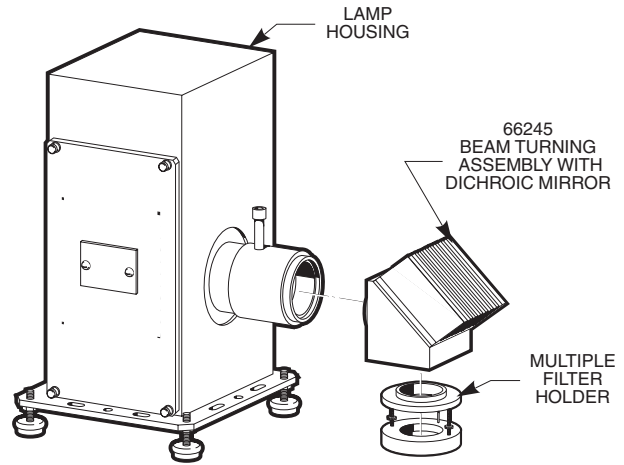


Fig. 3 The 66245 Beam Turning Assembly holds dichroic mirrors at the output of the housing condenser. You can then add blocking filters in the Multiple Filter Holder. The dichroic protects the blocking filters from cracking due to the heat from the source.

Ordering Information

Model (Metric)	Description
96000	150 Watt Solar Simulator; includes 6255 Ozone Free Lamp
69000	Extended Care Plan
6255	150 W Xe, OF Lamp (Included with 96000 Solar Simulator)
6254	150 W Xe, UV Enhanced Lamp
66245	1.5 Inch Series Mirror Holder Required for Dichroic Mirrors

Air Mass Filters

For This Air Mass	Choose This Filter Combination
AM 0 (Outer Space)	81090*
AM 1 Direct	81090* 81091
AM 1.5 Direct	81090* 81092
AM 2 Direct	81090* 81093
AM 1.5 Global	81094

* The 81090 AM 0 Filter is required to simulate all air masses except AM 1.5 Global. You only need to order it once.

Dichroic Mirrors and Filters

Mirror/Filter Type	Model	Also Requires
260 - 320 nm Dichroic	66217	66245 Beam Turner
280 - 400 nm Dichroic	81045	66245 Beam Turner
350 - 450 nm Dichroic	66218	66245 Beam Turner
420 - 630 nm Dichroic (Cold Mirror)	66219	66245 Beam Turner
UVC Blocking Filter	59450	81045 Dichroic + 66245 Beam Turner
Atmospheric Attenuation Filter	81095	81045 Dichroic + 66245 Beam Turner
VIS-IR Bandpass Blocking Filter	81096	81045 Dichroic + 66245 Beam Turner

WEB See our website for more info