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Find the *Newport / Oriel 68945* at our website: *Click HERE*

Exposure Control Instruments for Oriel Large Area Illuminators



- Reduce long and short term variations in lamp output
- Ensure accurate timed exposures
- Dose control
- RS-232 communications
- Works with Oriel Solar Simulators and Flood Exposure Sources

68951 Digital Exposure Controller and 69920 1000 W Solar Simulator Power Supply

The 68951 Digital Exposure Controller is a light intensity controller and digital timer in one package. It maintains a constant light level and allows preset timed or dosage based exposure control. For those not requiring a light intensity controller or dose control, we offer a stand-alone digital timer, model 68945. Both instruments may be controlled via a PC through an RS-232 interface.

The 68951 and 68945 support our Large Area Illuminators, Solar Simulators and Flood Exposure Sources. We also offer light intensity control instruments for our small area illuminators.

Digital Exposure Controller

Our sources have highly regulated power supplies to operate the lamps at constant power or current. However, with aging of the lamp and variables such as electrode erosion, gas absorption or desorption, the light output can change. These changes tend to be wavelength dependent. The 68951 Digital Exposure Controller works with the power supply to compensate for these changes and ensure a stable, long-term output. See Fig. 1 for an example of the effect of the 68951 on the light output of a kW Solar Simulator.

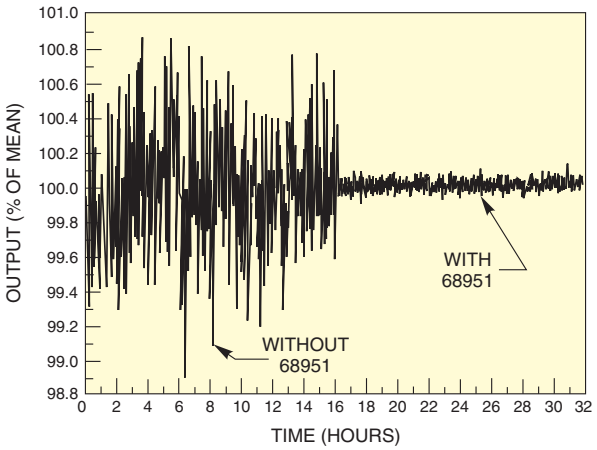


Fig. 1 The effect of the 68951 Digital Exposure Controller on the output of a 1000 W Solar Simulator

How it Works

The 68951 is made up of a light sensing head, a controller, and a fiber optic probe. The silicon based light sensor monitors part of the light source output (via the fiber probe), and the controller constantly compares the recorded signal to the set level and changes the power supply output accordingly to keep the measured signal at the set level. Automatic detector gain setting allows the unit to work with 300 to 1600 W Large Area Illuminators.

Built-in Digital Timer

The 68951 also allows timed exposures. The 68951 is capable of exposure times from 10 ms to 9999 hours, in increments as short as 10 ms. However, the mechanical response time of the shutter in our Solar Simulators limits the minimum exposure time to 100 ms, and the shortest interval between exposure to 80 ms. For those instances when a timed exposure is not sufficient, you can use the auto-dose mode to keep the shutter open until the total flux equals a user set value.

Idle Control Feature

The 68951 is intended to work specifically with Oriel Solar Simulators, where there is a light shutter between the sensor head and the arc lamp. When the shutter closes, the idle system maintains the lamp at its rated power; this ensures that when the shutter is closed the 68951 does not compensate for lack of signal by commanding the power supply to increase power to the lamp.

Mounting

Fig. 2 shows a diagram of the 68951 Exposure Controller picking off a part of the light output from a 1000 W Oriel Solar Simulator. A fiber probe, mounted to the Simulator's output lens assembly, samples a small segment of the uniform portion of the output beam and feeds it to the light sensing head.

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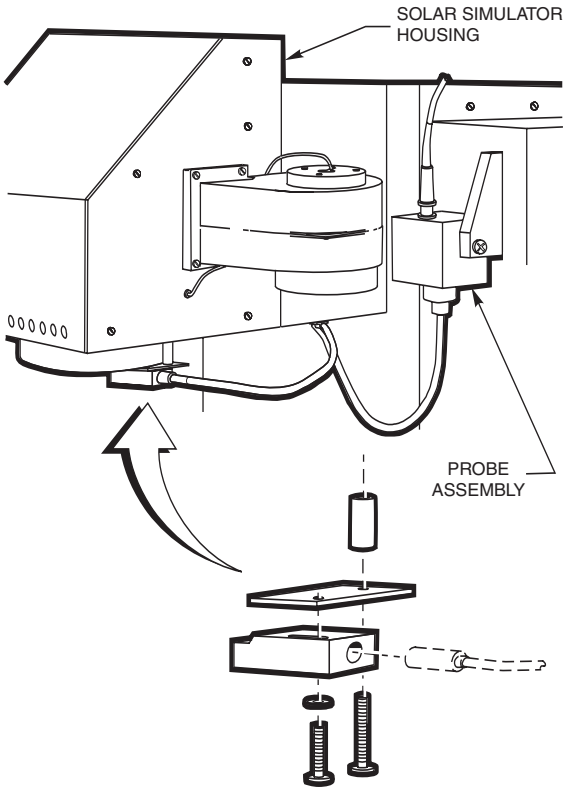


Fig. 2 Diagram showing the probe assembly from the 68951 Digital Exposure Controller, mounted to a Solar Simulator Housing

Stand-Alone Digital Timer

If timed exposures are required without the need for ultra constant light output, purchase the 68945 Digital Timer. Just like with the 68951 Digital Exposure Controller, the 68945 Digital Timer allows exposure dosages from 10 ms to 9999 hours, in 0.1 second intervals. Note: the Illuminators' mechanical shutter limits the exposure times to 100 ms, and the shortest interval to 80 ms.

Accessories

You can remotely control the 68951 or 68945 via a push button switch, model 68955.

For Older Oriel Solar Simulators

The 68951 and 68945 only work with our current family of Solar Simulators. Models manufactured prior to 2003 use a power supply that is not compatible with these new Exposure Control Instruments. Please contact a Sales Engineer for information on exposure control models that are compatible with pre-2003 Oriel Solar Simulators.

Ordering Information

Model	Description	Price
68951	Digital Exposure Controller	
68945	Digital Timer	
68955	Remote Switch	

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