LS3000 SERIES
HIGH TEMPERATURE BLACKBODY SOURCE

The LS3000 Series Blackbody Source has a 0.5″ or 1.0″ diameter cavity and is continuously adjustable from 1000°C to 3000°C. A dry argon gas atmosphere is required.

The Cavity is protected by a curtain of dry argon gas and can be used without any windows. A removable calcium fluoride window having a long wavelength cutoff of about 10 microns is supplied to limit the dry gas consumption.

Built-in Radiometric Sensing provides a continuous proportional temperature control for maximum stability over the entire temperature range.

The Source is mounted on a cart containing the Model 2501A Temperature Controller and mounting accessories for an argon tank. Provisions for a water cooling are also included.

The Controller uses selected components to provide extremely stable and repeatable control of the cavity temperature.

Proportional Temperature Control is assured through the use of a radiometric probe located at the front of the cavity. The signal level from the probe is continuously compared to the temperature set point. Any difference is amplified and used to control the saturable reactor output to the resistance heated cavity.

Dry Gas Pressure Regulators and gauges as well as mounting provisions for a dry argon gas tank are provided.

Safety interlocks prevent power from reaching the cavity unless gas pressure, water pressure and water temperature are at safe levels.

The Source is mounted on a cart and is highly portable. Cavity height is adjustable for convenient alignment with auxiliary optical systems.

Five interchangeable precision apertures are provided. Customer may select from a number of aperture diameters.

Interchangeable internal cavity assemblies are available. The entire assembly may easily be replaced without any special tools within thirty minutes.

Accessories available include spectral filters, apertures, fixed and variable frequency modulators and collimators.

The LS3000 Series Source Features:

- ***Cavity Rebuild Kits Available***
- ***Portable - Can Easily Be Moved from Lab to Lab***
- ***Adjustable Cavity Height***
- ***Safety Interlocks Prevent Accidental Burnout***
- ***Designed for High Reliability and Stability***
- ***Dry Gas Curtain - Permits Use Without Window***
- ***No EMI - No Induction Coils or SCRs***

Electro Optical Industries, Inc.

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Specifications

Parameter	Model LS3000-050	Model LS3000-100
Cavity temperature range	1000° to 3000°C	1000° to 3000°C
Cavity temperature accuracy	±(0.25% of set temperature +1.0) up to 2700 °C ±(0.6% of set temperature +1.0) up to 3000 °C	
Cavity temperature stability	0.1 °C of set temperature	0.1 °C of set temperature
Cavity uniformity	± 0.15% of set temperature	± 0.15% of set temperature
Cavity emissivity	0.999± 0.01	0.999± 0.01
Cavity diameter	0.5 inch	1 inch
Adjustable cavity height	30″ to 41″	30″ to 41″
Window material (removable)	calcium fluoride	calcium fluoride
Window spectral response	0.2 to 11 microns	0.2 to 11 microns
Field of view (FOV)	3.5 degrees	4.5 degrees
Warm-up time (to 3000°C)	less than 60 minutes	less than 60 minutes
Dry gas requirement	dry argon 99% pure	dry argon 99% pure
Dry gas consumption (220 cu. ft.)	>30 day with window 8 hours without window	>30 day with window 6 hours without window
Water requirements	1.5 gallons/minute at 30 psi	2.0 gallons/minute at 30 psi
Ambient temperature range	0° to 50°C	0° to 50°C
Power requirement	VAC, 50/60 Hz, single phase; 50amps	VAC, 50/60 Hz, single phase; 80 amps
Shipping weight	1000 pounds	1200 pounds
Overall size	50″H × 32″W × 59″D	50″H × 32″W × 59″D

EOLS3000-011108MV

Specifications subject to change without notice.

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