

IR-508

Miniature Cavity Blackbody



FEATURES

- Digital Controller
- Direct Mount Modulators Available
- 16 Internal Ramp to and Hold from Front Panel
- Two (2) Customer Configured Alarm Relays
- RS-232C/422A/485 or IEEE-488 (optional)
- Ice Bath Reference Probes (optional)

DESCRIPTION

The IR-508 blackbody reference source is designed to provide infrared radiation as an ideal blackbody emitter. The output energy from the 0.25" cavity closely follows the theoretical maximum energy curve described by Max Planck's equation, and allows users to calibrate, align, and measure infrared devices and phenomena of all types. The smaller size and lower power consumption make the IR-508 ideal for applications with limited space and power, such as in environmental chamber down to -80°C . Using the optional 8 position aperture wheel, the infrared flux can be varied by known amounts without disturbing critical optical setups, and combining apertures and distance changes, the flux at any point can easily be determined. The IR-508 is ideal for the Near (1-3 μm), Mid (3-8) and Far (8-30+ μm) infrared bands. The IR-508 is a scaled down version of the industry standard IR-563 source..

The 20° tapered - recessed - cone, surface emissivity, and cavity aspect ratio combine to provide blackbody radiation by multiple reflection, absorption and re-emission of its thermal energy. The thermal energy of the cavity is provided by a ceramic-sealed heater coil that uniformly heats the cavity cylinder to temperatures from 50°C to 1050° . The IR-508 system



carries a full, two-year warranty due to the reliability of actual field units used over the last 30 years. Designed for use with the IR-201 Temperature Controller.

SPECIFICATIONS

	IR-508
Temperature Range	50°C to 1050°C
Accuracy	+/- .05% of full scale +/- 1 digit
Setability	1°C
Stability	+/- .1% of full scale per 24 hour period
Type of Control	P.I.D.
Sensing Element	Type S, Platinum/Platinum – 10% Rhodium
Calibration Thermocouple (STD)	Same as above (matched) +/- .1% accuracy
Cavity Emissivity	0.99 +/- 0.01
Cavity Type	Recessed 20° cone
Aperture Wheel Assemblies	Optional
Aperture Diameter	0.200" – 0.100" – 0.050" – 0.025" – 0.0125"
Max. Aperture Temp. Rise	30°C
Max. Housing Temp. Rise	80°C
Cavity Opening	0.250" diameter max.
Warmup Time	8 minutes amb. to 1050°C
Dimensions (Source)	5.40 x 3" x 4.9"
Net Weight	2.5 lbs.
Shipping Weight	5.0 lbs.
Power Req. (110-120VAC, 50/60Hz, 1 phase)	2.0 amp max.
	220VAC option available (installed internally)

IR-508 OUTLINE DRAWING

