



FEATURES

- iProbe Temperature Sensors
- Temperature Accuracy of $\pm 0.007^{\circ}\text{C}$ (0°C - 50°C), ± 0.0005 (T-25) elsewhere
- Enhanced Emissivity > 0.970 , ($2\ \mu$ to $14\ \mu$)
- Uniformity $\pm 1\%$ of set ΔT or 0.01°C , whichever is greater
- 0.001°C Temperature Stability
- Ethernet, GPIB and RS-232 Interfaces
- -40°C to 175°C Absolute Temperature
 -20°C to 150°C Δ Temperature Available
- 4", 6", 8", 12" Emitting Surface Size
- Automatic Radiometric Compensation
- Multi-Function Controller

OVERVIEW

SBIR's Infinity Dual Differential Blackbody (DDB Series) is designed for applications requiring the precision and versatility provided by two separate blackbodies. Two-point correction of infrared detectors, radiometric calibration of IR target projectors and simulators, and high precision system-level testing all depend on an accurate dual-temperature source. The temperature control circuitry of the two blackbodies is shared, eliminating the bulk and expense of two controllers, and greatly improving the accuracy of the differential temperature control.

The temperature controller allows the absolute temperature of both blackbodies to be controlled independently. Alternately, the temperature of source 2 can be controlled with respect to source 1. Another key feature of these systems is the new iProbe from SBIR. This intelligent temperature sensor is calibrated independently of the blackbody system. To re-calibrate the system you need only exchange the probe with a recently calibrated one. No special equipment is required thus minimizing downtime.

AVAILABLE SIZES & TEMPERATURES

Model	Emitting Surface Size	Temp. Range A 0°C to 100°C Abs. T (-25°C to 75°C ΔT)	Temp. Range B 0°C to 175°C Abs. T (-25°C to 150°C ΔT)	Temp. Range C' -40°C to 100°C Abs. T (-20°C to 75°C ΔT)	Temp. Range D' -40°C to 175°C Abs. T (-20°C to 150°C ΔT)
DDB-04	4" x 4"	X	X	X	X
DDB-06	6" x 6"	X		X	
DDB-08	8" x 8"	X		X	

Solutions

for Every EO Test Requirement

30 S. Calle Cesar Chavez, Suite D • Santa Barbara, Ca. 93103
 ph (805) 965-3669 • fax (805) 963-3858 • <http://www.sbir.com>

SYSTEM SPECIFICATIONS

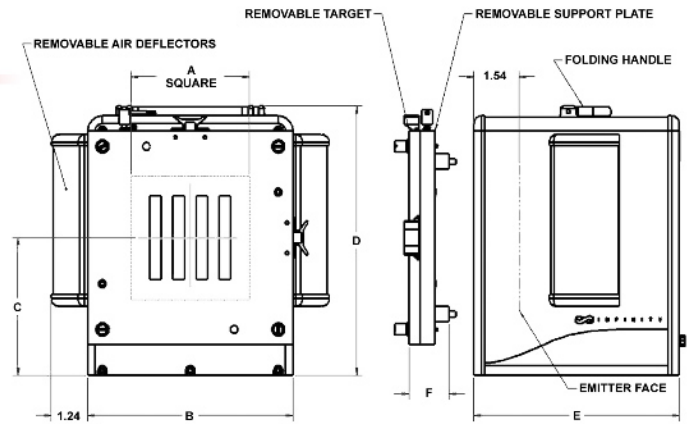
Emissivity.....	> 0.970, (2 μ to 14 μ)
Uniformity.....	±1.0% of set ΔT or 0.01°C, whichever is greater
Absolute Accuracy.....	±0.007°C for (0°C <T< 50°C) or ±0.0005 (T-25) elsewhere
Differential Accuracy.....	±√[(T1 error) ² +(T2 error) ²] where error is ±0.007°C for 0°C <T< 50°C and ±(T-25)(0.0005) elsewhere
Stability.....	σT ≤0.001°C (0°C to 50°C), σT ≤0.002°C (-40°C to 0°C, 50°C to 100°C), σT ≤0.003°C (110°C to 175°C)
Display Resolution.....	0.001°C or 0.0001°C
Setpoint Resolution.....	0.001°C
Selectable Ready Indicator.....	±0.001°C to ±5.000°C
Approximate Heating Rate ²	+0.40°C/sec. (at 25°C)
Approximate Cooling Rate ²	-0.20°C/sec. (at 25°C)
Settling Time.....	<45 seconds

GENERAL SPECIFICATIONS

Operating Temperature.....	0°C to 50°C
Storage Temperature.....	-20°C to 70°C
Relative Humidity.....	5% to 95%, non-condensing
Maximum Power Consumption.....	1600W
Approximate Blackbody Weight.....	DDB-04 - 15.0 lbs., DDB-06 - 25.0 lbs., DDB-08 - 40.0 lbs.
Approximate Controller Weight.....	15.0 lbs.

DIMENSIONS

Model	(inches)				
	A	B	C	D	E
Aperture	Width	Optical Center Line	Height	Depth	
DDB-04	4.04	7.00	4.50	8.83	7.00
DDB-06	6.04	9.00	5.50	10.83	7.00
DDB-08	8.04	11.00	6.50	12.83	7.00



ORDER INFORMATION

Please contact the SBIR sales team at (805) 965-3669 to ensure proper part number and to receive a quotation.

- Notes: 1. For use in a thermal chamber from -20°C to -50°C
 2. Slew rates vary depending on blackbody size and environmental conditions

* Specifications are subject to change without prior notice



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