

## FEATURES

- iProbe Temperature Sensors
- Temperature Accuracy of  $\pm 0.007^{\circ}\text{C}$  ( $0^{\circ}\text{C}$ - $50^{\circ}\text{C}$ ),  $\pm 0.0005$  (T-25) elsewhere
- Enhanced Emissivity  $> 0.970$ , ( $2\ \mu$  to  $14\ \mu$ )
- Uniformity  $\pm 1\%$  of set  $\Delta T$  or  $0.01^{\circ}\text{C}$ , whichever is greater
- $0.001^{\circ}\text{C}$  Temperature Stability
- Dry Gas Purge
- $-40^{\circ}\text{C}$  to  $175^{\circ}\text{C}$  Absolute Temperature
- Ethernet, GPIB and RS-232 Interfaces
- 4" or 8" Emitting Surface Size
- Multi-Function Controller

## OVERVIEW

The SBIR Infinity EXLT Series Extended Area Absolute Low-Temperature Blackbody Source is designed for applications where temperatures below the  $0^{\circ}\text{C}$  limit of standard blackbodies must be generated. This blackbody system can achieve temperatures as low as  $-40^{\circ}\text{C}$  in an uncontrolled lab environment. For applications such as low-background flood mode testing of detectors, the Model EXLT can eliminate the need for expensive and cumbersome temperature chambers or other special provisions to achieve these cold backgrounds.

A recirculating refrigerated bath cools the blackbody to approximately the desired temperature using a proprietary fluid. A sophisticated electronic control system and an array of thermoelectric coolers control the blackbody surface precisely to the desired setpoint. The EXLT Series includes all of the components needed for operation: blackbody, refrigerated bath, temperature controller, cables, and hoses. Operation of the system is straightforward, and maintenance is minimal.

The EXLT Series is a low cost, easy-to-use solution for applications requiring a low temperature extended blackbody source.

## AVAILABLE SIZES & TEMPERATURES

Model	Emitting Surface Size	Temp. Range C $-40^{\circ}\text{C}$ to $100^{\circ}\text{C}$ Abs. T	Temp. Range D $-40^{\circ}\text{C}$ to $175^{\circ}\text{C}$ Abs. T
EXLT-04	4" x 4"	X	X
EXLT-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**

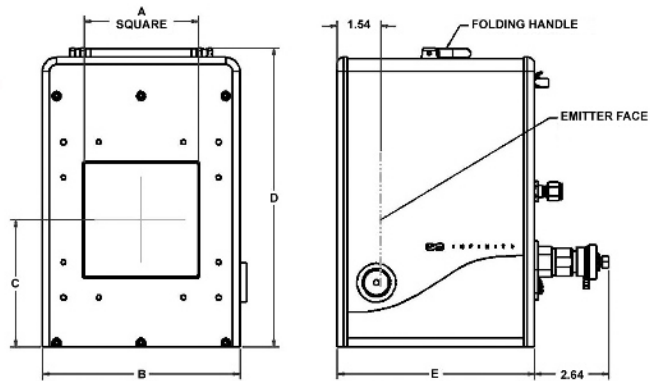
Emissivity.....	> 0.970, (2 μ to 14 μ)
Uniformity.....	± 1% of set ΔT or 0.01°C, whichever is greater
Absolute Accuracy.....	±0.007°C for (0°C <T< 50°C) or ±0.0005 (T-25) elsewhere
Stability.....	σT ≤0.001°C (0°C to 50°C), σT ≤0.002°C (-40°C to 0°C, 50°C to 100°C), σT ≤0.003°C (110°C to 175°C)
Display 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 <sup>1</sup> .....	+0.40°C/sec. at 25°C
Approximate Cooling Rate <sup>1</sup> .....	-0.20°C/sec. at 25°C
Settling Time.....	45-120 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 Blackbody Power Consumption.....	850W-1600W depending on size and temperature range
Chiller Power Consumption.....	1800-2000W
Approximate Blackbody Weight.....	EXLT-04 - 25.0 lbs., EXLT-08 - 65 lbs.
Approximate Controller Weight.....	15.0 lbs.
Chiller Weight.....	80.0 lbs.

**DIMENSIONS**

Model	(inches)				
	A Aperture	B Width	C Optical Center Line	D Height	E Depth
EXLT-04	4.04	7.00	4.50	10.56	7.00
EXLT-08	8.04	11.00	6.50	14.56	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. Slew rates vary depending on blackbody size and environmental conditions

\* Specifications are subject to change without prior notice



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