

Model 5031/5032

Variable Temperature Air Bath

The Easy Solution For Precise Temperature Control



5031/5032 Features

- > Excellent temperature stability, better than 0.03 °C over 24 hours
- > Cooling capacity up to 6°C below ambient
- > Temperature range 15°C to 50°C
- > Forced air circulation ensures uniform temperature
- > Large volume enclosure – over 82 Liters
- > Enclosure is fully EMI shielded
- > Convenient front access door. Side access hole for cables and probes
- > Perfect for Checking Temperature Coefficient of Precision Air Resistors
- > Fully Programmable Via the Optional IEEE-488.2 Interface

Guildline Model 5031/5032 are precision air baths providing uniform constant temperature over a wide operating range. With improved temperature coefficients of many products today, a high quality air bath can be an excellent alternative to traditional fluid baths.

Considerable design effort has gone into producing a stable and uniform chamber temperature. This is achieved by forcing air between the front and rear shells of the chamber and then up through strategically located openings in the floor, which results in a uniform distribution over the entire chamber.

Two circulation fans provide excellent circulation plus a measure of redundancy. In the unlikely event of a fan failure, the second fan will continue to allow operation with some reduction in control precision until repair is possible.

Unlike fluid baths, there are no expensive supplies to replenish, and operation is tidy and contained. This high quality unit can be operated on a bench or free-standing. These Air Baths have also been designed for ease of field maintenance through the use of modular components and sub-assemblies.

These air baths utilize Peltier cooling which allows the operating temperature to be set up to 6 °C below ambient. Incandescent heaters allow operation up to 50 °C. For 5031, temperature set point is selected using a front panel 4-decade digital switch to the nearest 0.01°C; for 5032, temperature is set via front panel keyboard, or IEEE488.2 and RS232C interfaces to the nearest 0.001°C.

The 5031/5032 Air Baths provide a perfect environment under a wide range of operating temperatures for precision equipment such as the Guildline 9334A Resistance Standards.

The air bath design consists of a painted shell outer cabinet that houses a stainless steel inner chamber. Inside, two removable shelves allow precision resistance standards or other devices to be positioned and monitored. Access to the chamber is via a full size hinged front door. Cables can enter through a 69 mm (2.7") diameter side opening. Temperature monitoring is provided through the front panel display using a precision temperature probe.

The Guildline Model 5031/5032 Air Baths are a superb choice for precision controlled operating environments without the mess and expense of fluid bath operation.

Their uses include thermal stressing of precision materials, automatic calibration of thermistors and temperature elements, maintenance of a constant temperature environment for electrical references, and studies of the effect of temperature variation on electrical references.

5031/5032 Variable Temperature Air Bath

Performance Specifications

Specifications	5031	5032
Chamber Temperature Range	15 °C to 50 °C, or up to 6°C below ambient	
Temperature Set Point Accuracy	± 0.06°C over 24 hours. ± 0.08 °C over 1 year	
Set Point Resolution	0.01 °C	0.001 °C
Temperature Stability	± 0.03°C over 24 hours, ± 0.06 °C over 1 year	
Temperature Uniformity	± 0.2 °C relative to chamber center, 5 cm min from walls	
Temperature Attenuation	± 0.04 °C/ °C of ambient temperature	
Heating Rate	6°C/hour	25°C/hour
Cooling Rate	5 °C/hour, above ambient temperature 2 °C/hour, below ambient temperature	
Cold Power On Stabilization	6 hours to within ±0.1°C of set point	3 hours to within ±0.1°C of set point
Maximum Power Dissipation of unit under test (set point above ambient)	5W maximum	
Temperature Monitor Accuracy	NA	± 0.025 °C
Temperature Monitor Resolution	NA	0.001°C
Over Temperature Protection	Automatic shutdown if temperature exceeds 55 °C ± 4 °C	

General Specifications

Chamber Dimensions	610 H x 381 W x 356 D mm (24 H x 15 W x 14 D inches)
Chamber Capacity	82 dm ³ (2.9 cu. ft)
Exterior Dimensions	864 H x 533 W x 660 D mm (34 H x 21 W x 26 D inches)
Weight	78 kg (172 lbs)
Power Supply	115V, 230V ± 10% 50Hz, 60Hz ± 10% 200 VA
Environment: Operating Storage	18 °C to 40°C, 20% to 50% RH -20 °C to 60°C, 15% to 80% RH



Ordering Information

5031	Temperature Air Bath, manual, front panel temperature setting
5032	Temperature Air Bath, temperature setting via IEEE488.2/RS232 or manual, front panel setting
TM5031	Technical Manual (included) Certificate of Calibration (included) Report of Calibration (extra charge)

Accessories:

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