5032 AIR BATH

PRECISION VARIABLE TEMPERATURE AIR BATH

Easy to Use, Highest Quality Air Bath with Precision Temperature Control

GUILDLINE INSTRUMENTS 5032 AIR BATH is a precision air bath providing uniform constant temperature over a range of operating environments.

To improve measurements and reduce the uncertainty contribution from temperature effects, this high quality Precision Air Bath is an excellent alternative or supplement to traditional oil baths and laboratory environmental control.

THE 5032 AIR BATH PROVIDES A CONTROLLED ENVIRONMENT UNDER A WIDE RANGE OF OPERATING TEMPERATURES FOR PRECISION EQUIPMENT SUCH AS THE GUILDLINE 9334A, 9336 9337, AND 7334 RESISTANCE STANDARDS!

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

The 5032 provides an excellent solution for a highly controlled and variable temperature environment for any precision standard in a laboratory environment of 23 ˚C ± 5 ˚C. You no longer need an expensive HVAC system for the entire laboratory.

You can use a Guildline 5032 Air Bath as an alternative to fluid baths. More importantly improve your temperature capabilities for standards which have high temperature coefficients, or which cannot be used with an oil bath (i.e. ≥ 100 kΩ).

With a wide operational temperature environment and the high quality design and manufacture, this air bath can be used for processes requiring higher stability than provided by industrial grade environmental chambers.

FEATURES

- Excellent Temperature Stability, Better Than 0.015 ˚C over 24 Hours
- Only Precision Air Bath that Includes a Separate PRT to Report the True Temperature from Anywhere Inside the Bath Chamber
- Temperature Range 15 ˚C to 50 ˚C
- Cooling Capacity up to 6 ˚C Below Ambient
- Dual Fan - 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 Coefficients of Precision Air Resistors
- 5032 Fully Programmable Via the IEEE-488.2 or RS 232 Standard Interfaces

5032 Precision Temperature Air Bath

These Precision 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.

The 5032 Air Bath has a heavy duty steel, EMI shielded, outer cabinet that houses a polished stainless steel inner chamber which provides additional EMI shielding. The fully recessed door is also double walled with heavy duty mounting hardware and roller stainless steel latches. Inside you will find two removable shelves that allow precision resistance standards and other devices to be positioned and monitored. Additional removable shelves can be added. Operator access to the chamber is via the full size hinged swinging front door. Cables can enter through a 69 mm (2.7") diameter side opening.

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. These Air Baths have also been designed for ease of field maintenance using modular components and sub-assemblies.

5032 Rear Access

Shown left is the swinging rear door that provides easy maintenance access. Four heavy duty side handles are also provided for moving the Bath. This Guildline Air Bath has been over-engineered to ensure that it operates properly and accurately, not only during the industry leading 2 year warranty period, but continuously for years to come.

The 5032 provides comprehensive and complete control via the front panel or remotely from a connected computer.

For manual control, this model provides an easy to use keypad with a fluorescent multi-line display. The display is used to indicate the instrument status and to show the current temperature and associated statistics. The display can be set to show the control point temperature, or the actual temperature anywhere inside the bath via the auxiliary probe provided with the air bath.

Main Menu Selections

- Help
- Measurement Display
- Display Setup
- Numerical Trend
- Measurement History
- Channel Setup
- Calibration
- Diagnostics
- Temperature Control
- RS232 Setup
- GPIB Setup
- Password Functions

5032 Programmable Interface Control

The Guildline 5032 features rich menu options and keyboard controls that are superior when compared to the competition. The competition provides very limited menu operation that only allows the set point temperature to be set, and only displays the control temperature, not the real temperature inside their bath.

Guildline's temperature monitoring of the inside of the bath is provided through the front panel display using a second precision temperature probe. Competitive baths require that a customer purchase a separate digital thermometer and temperature probe to monitor the inside bath temperature. This increases the cost for the customer, requires maintenance and calibration of a 2nd instrument, and complicates automation. The separate 5032 temperature probe also provides the real temperature from anywhere inside the precision Air Bath. We provide the extras - right down to allowing visual indication of heater control - as this is what makes the 5032 a true Laboratory Grade Standard!

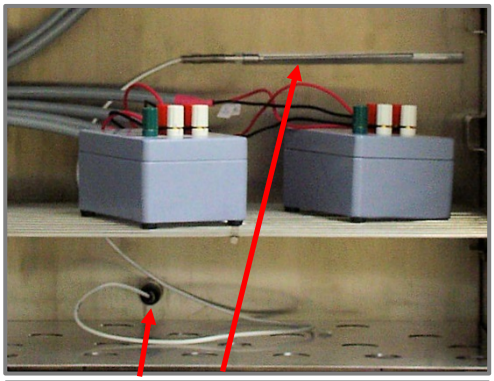
Don't be fooled by competition statements that their air baths are equivalent to a Guildline Air Bath!

While the competition claims to use a metrology based design, a simple and quick review contradicts this claim.

A visual inspection will show that some competitors uses inexpensive door handles and locks, a sheet metal outer shell, and a door that does not allow a tight fit on the inner chamber. Unlike the Guildline 5032 which uses a recessed door design, the competition provides a flat door fitting with an inexpensive foam seal. This approach provides poor EMI shielding, and the gasket can easily be torn. Hinge locks are simply screwed in with no re-enforcement which allows the metal to bend and be torn from the mounting. Rear access point for cable connections means you must allow for rear access to the unit (must stand out from wall). The front temperature display shows only the temperature reported by the controller, not the actual temperature inside the air bath, and the reported temperature is heavily filtered. In addition, the competition has very limited menu options and remote operational commands.

Ask for a copy of our Air Bath Competitive analysis and see just how good the 5032 stacks up against the competition!

As previously mentioned, the Guildline 5032 provides a Metrology Grade design with the quality, features and functions no other bath manufacturer provides.



Close-up Inside View of Model 5032 PRT and PRT Port (connection)

When you look at the ability to monitor temperature, the 5032 does not depend on the control PRT. A control PRT only provides the temperature at the location where the heat/cooling is applied, which is outside the air bath chamber. The control PRT, whether the 5032 or a competitive Air Bath, does not provide the real temperature inside the air bath where the standards are located. This is why the 5032 incorporates a 2nd PRT that a user can place inside the chamber, in any position that is most advantageous to the measurement. A plug-in port is already available for the 2nd PRT and connects it directly to the system controller, providing complete auxiliary measurement capability. This is integrated functionality that no other manufactures can provide. Rather than tell you that they do not have this capability, competitors will tell you that all you need to do is buy another temperature standard to perform this monitoring capability. This means another standard to buy, program, calibrate, write software for and support – just to meet what the model 5032 can provide with no additional standards. With competitive air baths, a customer has to incur extra costs for an external digital thermometer and probe, along with associated support and calibration costs.

Not only does this 2nd direct plug-in PRT come standard with every 5032 Precision Air Bath – but the supporting menu structure is already in place and is built into the 5032 Bath. You can simply monitor the interior bath temperature, compare the PRT temperature to the Controller Temperature Setpoint, and perform other temperature comparisons. In addition, the 2nd PRT can be easily removed and calibrated. Guildline provides the software that then transfers this calibration to the embedded control PRT. No other air bath is as easy to calibrate as a Guildline Air Bath!

Guildline Model 5032 – Designed Specifically for Metrology Laboratory and Precision Applications!

Dual Fan Control providing the most uniform air flow available, precision integral proportional controller, 2nd PRT to measure the temperature anywhere inside the bath, dual- wall construction with special insulation between the walls, the highest quality stainless interior with painted powder coat EMI exterior, stainless steel hardware, recessed door and special gasket for true EMI protection – the model 5032 will provide you with the best in quality and control today, tomorrow and into the future.

5032 Series General Specifications			
Chamber Capacity	82 dm^3 (2.9 cu. ft)	Port Opening Diameter	3.375" (86 mm)
Exterior Dimensions (H x W x D)	864 mm	533 mm	660 mm
	34"	21"	26"
Chamber Dimensions (H x W x D)	610 mm	381 mm	356 mm
	24"	15"	14"
Environmental			
Operating		Storage	
18 °C to 40 °C	20 % to 50 % RH	-20 °C to 60 °C	15 % to 80 % RH
Power Supply	115, 230 VAC ± 10 %	Line Frequency	50 or 60 Hz ± 10 %
Volt/Amps	200 VA	Weight	78 kg (172 lbs)

Specifications	5032		
Cold Power On Stabilization	3 hours to within ± 0.1 °C of set point		
Chamber Temperature Range	15 °C to 50 °C, (Minimum to 6 °C below ambient)		
Temperature Uniformity	± 0.2 °C relative to chamber center, 5 cm minimum from walls for + 15 °C to + 40 °C		
Set Point Resolution	0.001 °C		
Temperature Set Point Accuracy (Both Models)	± 0.06 °C over 1 year within ± 5°C of ambient ± 0.1 °C over 1 year outside ± 5°C of ambient ± 0.2 °C over 1 year set point over 40°C		
Temperature Stability (Both Models)	ambient - ± 2 °C	24 Hours	± 0.015 °C
		1 Year	± 0.06 °C
	15 °C to 40 °C (Outside ambient ± 2 °C)	24 Hours	± 0.03 °C
		1 Year	± 0.08 °C
	➢ 40 °C	1 Year	± 0.2 °C
Temperature Attenuation	± 0.04 °C/°C of ambient temperature		
Heating Rate	25 °C/hour		
Cooling Rate	5 °C/hour, above ambient temperature 2 °C/hour, below ambient temperature		
Over Temperature Protection	Automatic shutdown if temperature exceeds 55 °C ± 4 °C		
Maximum Power Dissipation of unit under test (set point above ambient)		5 W maximum	

Model 5032 Additional Specifications			
Auxiliary PRT Temperature Monitor Accuracy (Bath Interior)		0.01 °C at 23 °C ± 5 °C	
Menu Selections/Setups	13 Selections including: Self Help, Measurement Display, Display Setup, Numerical Trend, Measurement History, Channel Setup, Calibration, Diagnostics, Temperature Control RS 232 Setup, GPIB Setup, Password Edit, Password Lockout		
Programmable Proportional Controller	Temperature Monitor Accuracy	± 0.025 °C	
	Temperature Monitor Resolution	0.001 °C	
	Programming	IEEE-488.2	RS232C
	Programming Language	SCPI (Standard Code Programmable Interchange)	

Ordering Information	
5032	Precision Temperature Air Bath, with Programmable Display, IEEE & RS232
/CC	Calibration Certificate (Included)
/OM	Operational Manual (Included)
/Report	Report of Calibration (Optional Charge)
/Wind	Adds Window Front to the 5032 Model Only
/Port	Adds 2nd Port (on Right Side) of either model
*Other Precision Leads Are Available – Call and tell us your requirements	

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