

Techne Precision Fluidized baths

The FB08 Fluidized bath offers excellent temperature stability and uniformity making it a good choice for temperature sensor comparison calibration work and shape setting of metals including Nitinol and platinum for Medical device manufacturing. With the optional probe holder which acts as an isothermal block, stabilities of better than $\pm 0.008^{\circ}\text{C}$ in dead-bed mode can be realized. Combine the FB08 with one of our Platinum resistance thermometer probes and indicator for a high performance temperature system. Here are some of the benefits of the FB08 Fluidized bath:

Techne FB08 Precision Fluidized bath



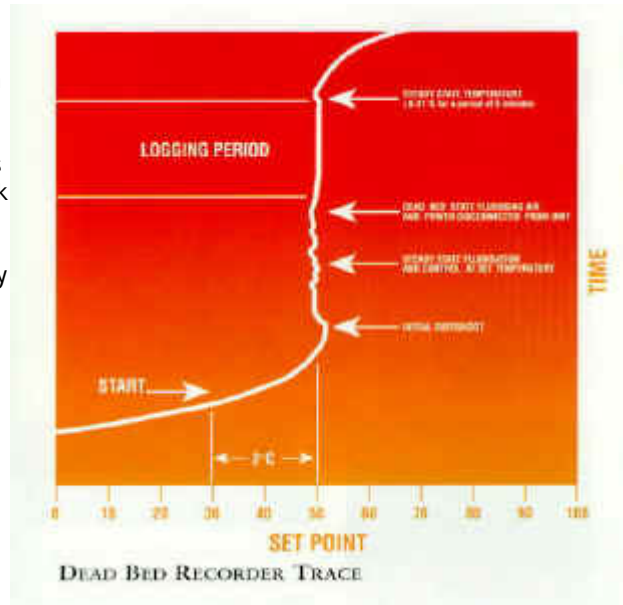
- The Fluidized bath of choice for critical processes requiring the highest stability and uniformity at temperatures up to $700^{\circ}\text{C}/1292^{\circ}\text{F}$.
- Fluidized bath action is **non-abrasive** to any devices or parts put into the bath including those highly polished.
- Much more efficient than ovens (all heat is lost when opening the door) and salt baths. Fast recovery time after the bath is quenched.
- Much Safer than volatile salt baths
- Stability and uniformity typically better than $\pm 0.1^{\circ}\text{C}$ as compared to salt baths which are upwards of $\pm 5.0^{\circ}\text{C}$

Description: A rectangular bench standing unit, the controls for temperature and fluidizing air flow are mounted on a recessed panel on the front, together with on-off switches for the power supply and the dust extractor and indicators for various functions. Insulated and vented the outer case is safe to touch even at the maximum operating temperature. When Fluidized, the media is heated by four immersion heaters close to the container wall with the control thermocouple between the heaters. The internal components are protected by an air cutout switch that disables heat in the event the fluidizing air is lost. A clean/dry inert gas from an external source passes through two filters and regulators, to reduce the pressure for the cyclone extraction system and fluidization. Fluidizing air passes through a flow meter and then to the plenum chamber from which it is distributed evenly around the inner container. Dust extraction is by means of ambient air drawn from around the probe holder/plate and then through a cyclone to the exhaust filter. Alumina dust removed from the opening of the bath is deposited into the front mounted collection jar where it can be removed and dumped back into the bath.

Operation: Setting of the fluidizing air is by means of a combined control valve and flow meter. (Note: air adjustment is automatic with the FB08C) Fluidizing air requirements are inverse of the bath temperature. i.e- lower bath temperatures require more air for proper fluidization. The bath temperature is set by means of a front panel mounted PID controller. Sensors for calibration should be suspended as close as possible to the center of the bath. When calibrating sensors the probe holder is recommended as it is custom built with the dimensions of the sensors you will be calibrating.

Dead-bed method

A major feature of the FB08 series is calibration using the Dead-bed method. During Dead-bed the power is shut off and 30 seconds later the fluidizing and extraction air are turned off. This causes the alumina to collapse around your work and provides a dense, high thermal insulation environment. For a period of three to ten minutes thermal equilibrium occurs and stability of better than $\pm 0.008^{\circ}\text{C}$ is observed.



Models to choose from:

The FB08 is offered in three different models. The standard FB08 operates from $+50$ to 700°C , in addition to the standard unit the FB08C offers automatic fluidizing air control and is capable of remote PC operation. When connected to your liquid nitrogen supply the FB08LT operates between -100 and $+200^{\circ}\text{C}$. The single probe plate and ring are included with the baths. You will also receive one 35lb. charge of alumina to get started.

Specifications

<u>Specification</u>	<u>FB08</u>	<u>FB08C</u>	<u>FB08LT</u>
Temperature range $^{\circ}\text{C}$	50 to 700	50 to 700	-100 to +200
Temperature Stability			
@ 500°C over a 5 minute period	± 0.1	± 0.1	± 0.08 at 200°C
Dead-bed stability	± 0.008	± 0.008	± 0.01
Display Resolution	1	1	1
Type of Control	3 term PID	3 term PID	3 term PID
Sensor Type	K' thermocouple	K' thermocouple	100 ohm PRT
Heat up time, minutes			
20 to 700°C	105	105	
20 to 200°C			30
Cooling time, minutes			
700 to 200°C	165	165	
200 to -100°C			90
Air Pressure (PSI)	60	60	60

Maximum flow liters/minute	127	127	170
Weight of medium, lbs.	35	35	35
LN ₂ consumption maximum liters/hour	n/a	n/a	7
Overall size LxWxH, inches	30.3 x 20.3 x 23.6	34.3 x 20.3 x 23.6	30.3 x 24 x 23.6
Working diameter x depth, inches	6.5 x 15	6.5 x 15	6.5 x 15
Warranty	1 year parts and labor		
Catalog number	3021400	3022100	3021600

Accessories

<u>Image</u>	<u>Description</u>	<u>Catalog Number</u>
	Basket probe/plate	6037759
	Probe carrier/holder (specify probe diameters) Use for comparison calibrations of temperature sensors and systems. Stability and uniformity better than 0.010°C in dead bed mode.	7031993
	Probe plate ring (included with the bath)	6007763

	<p>Probe plate (included with the bath)</p>	<p>6007764</p>
	<p>Air pressure regulator/filter</p>	<p>6035915</p>

Replacement Spare parts

<u>Description</u>	<u>Catalog Number</u>
Jar	6007557
8 micron filter	6007558
Jar Seal	6007559
1 (35lb.) charge of alumina	7030794
15 amp fuse	6008181
Porous plate	6001557
Heater	6007477
Air mover sleeve	6007359
Air mover Jetflow	6006985