



# Fluidized Calibration Bath

## Model 875

- Wide Temperature Range, High Accuracy
- Safe, sealed no powder loss into laboratory
- Comparison Calibration or use with Fixed Points

The Isotech fluidized calibration bath out performs dangerous salt baths in all respects: wider temperature range, less hazardous and better uncertainties. The bath is the result of 20 years research and development into flow patterns, powder technology and filtration. Recent developments have enabled the baths facilities to be extended even further, it is now eminently suitable for Liquid in glass thermometer calibration. To achieve this the filter and exhaust system were re-designed to cope with the increased level of powder needed for Liquid In Glass thermometer calibration.

The result is a calibration system to National Standards. The performance is only matched by heat pipe technology. The profiles are so small that the bath has been used by National Laboratories for fixed points of Indium through Aluminum, with great success. In comparison mode 2 sigma uncertainties of  $\pm 0.020^{\circ}\text{C}$  at  $300^{\circ}\text{C}$  and  $\pm 0.035^{\circ}\text{C}$  at  $660^{\circ}\text{C}$  can be obtained.

This is the only product capable of covering a very wide temperature range without a change of thermal media. Like most fluidized bed baths, the 875 bath consists of a container of aluminum oxide powder with a porous base plate. Sufficient air is passed through the base plate to motivate the powder into a fluid like state so that it will flow, display buoyancy effects and have good heat transfer characteristics.



A disadvantage of many fluidized-bed baths is that good temperature stability and uniformity cannot be achieved in the fluidized medium itself. They are obtained by using large metal blocks or by inhibiting the fluidizing action in the powder around the work piece - either locally, or by completely collapsing the bed at the required temperature, this is not the case with the 875. A full evaluation report is available upon request.

Model	875
Temp Range	50°C - 700°C
Volume (875/02)	67mm diameter, 475mm deep
Absolute Stability: In Equalising Block (875/09a) 10 Minutes	$\pm 0.005^{\circ}\text{C}$ at $150^{\circ}\text{C}$ $\pm 0.005^{\circ}\text{C}$ at $450^{\circ}\text{C}$ $\pm 0.020^{\circ}\text{C}$ at $660^{\circ}\text{C}$
Vertical Uniformity	$\pm 0.005^{\circ}\text{C}$ at $350^{\circ}\text{C}$ $\pm 0.005^{\circ}\text{C}$ at $420^{\circ}\text{C}$ $\pm 0.026^{\circ}\text{C}$ at $660^{\circ}\text{C}$
Heating time	50°C to 700°C < 240 minutes
Compressed Air Supply	1 BAR, 30 litres/minute at 100°C (50 L max)
Communications	Includes Serial Interface, PC Cable and Software
Dimensions	580mm Wide, 640mm Deep, 1570mm High (880mm to Top Panel)
Weight	85kg (including 22Kg of Alumina Powder)
Safety	Compliant to CE Regulations
Power	3kW (3 x 1kW heaters), 208-240V, 50/60Hz
<b>How to Order</b>	<b>Model 875 Fluidized Calibration Bath</b>

Refer to Evaluation Report for Full Details



### Accessories

The following options are available:

- 875/09a** Adjustable height aluminium bronze equalising block. Eight 8mm pockets x 240mm deep.
- 875/02** Calibration Tube. As fitted as standard. This enables a calibration volume of 67mm inside diameter and 475mm deep. This calibration tube is supplied and fitted as standard.
- 875/03** Oil free compressor and connecting tube. Used to supply air to the fluidized bed where an independent air supply is not available within the laboratory.
- 875/04** Alumina powder specifically chosen for this application, supplied in a 25kg container.
- 875/06** Liquid in Glass Thermometer Support Gantry System consisting of a multi-tube probe holder with ten 10.80mm by 470mm deep pockets, four support pillars and an adjustable stainless steel gantry with holes corresponding to the probe holder, to locate up to ten thermometers simultaneously. Thermometer collars and 'O' rings (10 off) are included with the assembly.
- 875/07** The multi-tube probe holder, described under 875/06 is available separately upon request.
- 875/08** Monocular and Support. Useful for viewing and magnifying the liquid column within the thermometer being calibrated. This ancillary piece of equipment is used in conjunction with

*Note: The bath is fully commissioned, tested and charged with the correct amount of aluminium oxide powder before despatch.*