



FB-08 Series

FLUIDISED BATHS

Features

- Temperature range -100°C to 700°C
- Control stability $\pm 0.2^\circ\text{C}$ to $\pm 0.5^\circ\text{C}$
- Three models to choose from
- Digital temperature indication/set-point
- PID temperature control



FB-08 Fluidised Baths are available in three models. There is the standard FB-08, covering temperatures of 50 to 700°C, the FB-08LT, for low temperature operation between -100 to 200°C, or the FB-08C, designed for minimum supervision between 50 to 700°C, which also works in conjunction with a supervisory computer via an RS232 (or optional IEEE488) interface.

All FB-08's are attractively finished free standing bench units, with controls mounted on a recessed panel on the front of the unit. The inner container is well insulated and the outer case is vented, so that it remains safe to touch even when the bath is operating at its maximum temperature.

The inner container is filled from the top with alumina. When fluidised this medium is heated by four immersion heaters close to the container wall; the control thermocouple is close to the heaters. If fluidisation is lost for any reason, the heater elements are protected from excessive surface temperatures by a pressure switch operated by the fluidising air.

Clean dry air from an external source passes through two filters and two regulators to reduce the pressure for the cyclone extraction system and for fluidisation. This fluidising air passes through a flow-meter and then to a plenum chamber from which it is distributed evenly around the inner container.

The FB-08LT has provision for connection to a liquid nitrogen (LN_2) supply and is fitted with an air drying system to avoid condensation of water when the fluidising air is introduced into the cold fluidised bed at ambient temperature. The LN_2 supply is regulated by a flow meter on the front of the unit.

Dust extraction is by means of ambient air drawn down past the probe plate and through a peripheral slot round the top of the inner container, then through a cyclone to the exhaust filter. Entrained medium, removed by the cyclone and discharged into a special jar accessible from the front of the unit, can be emptied back into the bath at regular intervals.

The operating temperature is set by depressing and releasing the up/down buttons on the front panel of the control unit. Control of the set temperature, incremental temperature steps, dwell times and control of dead bed state on the FB-08C can be programmed by the operator.

All FB-08 precision fluidised baths are supplied with the temperature controller and a probe plate to help keep items being processed away from the heating elements of the bath and to assist in the retrieval of items from the bath. A probe carrier is also available, which holds up to eight probes of varying sizes (customer specified). It is specially designed to allow free flow of the fluidising media assuring constant uniformity, reducing short term temperature fluctuations and improving calibration accuracy.

Specification

	FB-08	FB-08LT	FB-08C
Temperature range °C	50 to 700	-100 to 200	50 to 700
Temperature stability °C	Short term @ 50°C ±0.2 Short term @ 600°C ±0.3 Long term @ 50°C ±0.5 Long term @ 600°C ±0.5	@ 200°C ±0.2 @ -100°C ±0.5	Dead bed ±0.01 Short Term @ 50°C ±0.2 Short Term @ 600°C ±0.3 Long Term @ 50°C ±0.5 Long Term @ 600°C ±0.5
Display resolution °C	1	1	1
Type of control	3 term (PID)	3 term (PID)	3 term (PID)
Sensor type	K Chromel/Alumel thermocouple	Pt100	K Chromel/Alumel thermocouple
Heat up time, minutes	20 to 700°C, 105	20 to 200°C, 30	20 to 700°C, 105
Cooling time, minutes	700 to 200°C, 165	200 to -100°C, 90	700 to 200°C, 165
Air pressure, kPa (psi)	420 (60)	420 (60)	420 (60)
Maximum flow, litres/minute	127	170	127
Weight of medium, kg	16	16	16
Overall Size (L x W x H) mm	770 x 515 x 600	770 x 615 x 600	870 x 515 x 600
Working volume: (diameter x depth) mm	165 x 385	165 x 385	165 x 385
RS232 interface	NO	NO	YES
Automatic air supply	NO	NO	YES
Programmable	NO	NO	YES*

* TempWorks software has been designed for use with the FB-08C. It is a Windows® based software package that connects via an RS-232 connection to your computer, enabling easy programming of the controller.



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