



LabPlant™

SD-Basic Laboratory Scale Spray Dryer

A simple and effective laboratory scale spray dryer for product research and development.

The SD-Basic spray dryer is designed to enable initial product trials and evaluation to be carried out quickly and efficiently. The self-contained unit is supplied complete with glassware and all accessories required for operation.



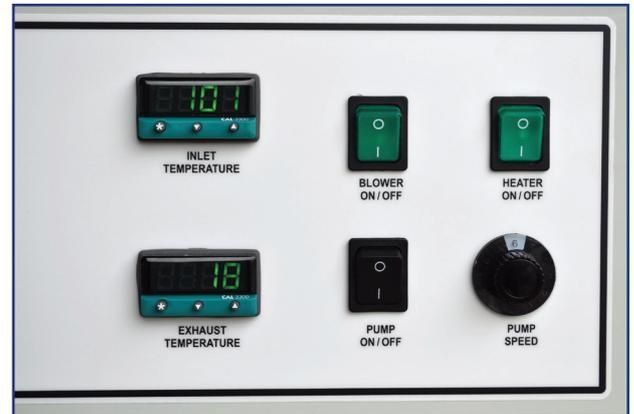
Two Fluid Nozzle

The stainless steel spray assembly consists of an inner tube for the liquid sample leading to a small diameter jet. An outer tube directs the supply of compressed air to the nozzle and the close tolerance gap between the nozzle and the jet ensures a fine vaporized spray. The SD-Basic is supplied as standard with 0.5 mm jet, other sizes are available as accessories. The spray assembly incorporates a manual de-blocking device that prevents the jet nozzle from becoming blocked



Controls and Functionality

The unit is designed so that all functions are simple to select and adjust, this ensures you quickly achieve the optimum conditions for spray drying. A simple digital controller allows selection of the inlet temperature and a rotary knob controls the pump speed. Another digital display shows the outlet temperature.



Construction

The chemically resistant powder coated housing includes the blower, heater and the controls for inlet temperature and pump speed. The drying air volume is fixed at 70m³/hr. The unit requires but is not supplied with an external compressor*. All clamps and fittings are designed to allow assembly and removal of the glass components in only a matter of seconds and the rear of the cabinet includes an inlet filter ensuring that the drying air does not include contaminants.



Applications

Spray drying can be used in a wide range of applications where the production of a free-flowing powder sample is required. This technique has successfully processed materials in the following areas:

- Beverages • Flavours & Colourings
- Milk & Egg Products • Plant & Vegetable Extracts
- Pharmaceuticals • Heat Sensitive Materials
- Plastics • Polymers and Resins • Perfumes
- Ceramics & Advanced Materials
- Soaps & Detergents • Blood • Dyestuffs
- Foodstuffs • Adhesives • Oxides • Textiles
- Bones, Teeth & Tooth Amalgam and many others



Technique

A self-priming peristaltic pump delivers the liquid sample from a container through a small diameter jet into the main chamber. At the same time compressed air* enters the outer tube of the jet which causes the liquid to merge as a fine atomised spray into the drying chamber. Heated air is blown through the main chamber evaporating the liquid content of the atomised spray.

The solid particles of the material, which are normally in a free flowing state, are then separated from the exhaust air flow by a cyclone and collected in the sample collection bottle. The exhaust airflow is directed through a flexible 50mm diameter hose direct to atmosphere or to an existing extraction system.

Specification

Suitability	Aqueous only
Type	2 Channel spray nozzle
Drying capacity	Maximum approximately 1000ml/h
Temperature range accuracy	40 ~ 200 (Temperature at inlet) \pm 1%
Dried air volume range	0.2 ~ 0.65m ³ /min
Spray air pressure range	0.2 -2 Bar
Feed pump volume range	60 ~ 2000ml/h
Heater	3kW
Feed pump	Variable speed peristaltic pump
Blower	Fixed @ 70m ³ /hr.
Maximum air pressure	70mbar
De-blocking interval timer	Manual
Noise (dB) @ 0.5m & 1m away	0.5m = 60.5 dB 1.0m = 58.7 dB
Overall dimensions	1200 x 500 x 500mm
Weight	60Kg
Power requirement	AC 220/240V 50/60Hz 13A



Our new purpose built, office, workshop and warehouse facility in Hunmanby, North Yorkshire.

For further information, quotations or advice please contact us at:

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