

# LABTEX™

the Science of Success

## ESDTi SPRAY DRYER

The cost effective solution



# The LABTEX ESDTi SPRAY DRYER

The model ESDTi is a cost effective solution for entry level spray drying incorporating all the features required for the testing and development of powders within the laboratory.

## Features

- Two fluid nozzle with automatic de blocker
- PID automatic control
- CALgrafix process monitoring software
- Integral compressor
- Single 13A power supply

## Benefits

- Ease of cleaning
- Robust design
- Wide range of operating parameters
- Simple service connections
- 'Plug and Play'



A compact laboratory spray dryer with a maximum temperature of 200°C and maximum liquid flow rate/evaporation capacity of 1.6 kg/hr. The ESDTi is ideal for research and development and sample preparation of many products.

The unit incorporates all parts necessary for the spray drying process and allows control of inlet temperature, liquid sample flow, drying air flow and compressor pressure.

The internal compressor activates the cleaning needle and the frequency of cleaning can be controlled. It is extremely quiet in operation and requires only 0.2 m<sup>2</sup>.

The ESDTi spray dryer is manufactured using the highest quality materials including 316 stainless steel, PTFE and borosilicate glass 3.3.

A screw cap assembly allows for easy mounting of the atomizer and it is quickly dismantled for cleaning.

PARAMETER	UNIT	ESDTi
Inlet temperature	°C	150 - 200
Power supply	V - ph - Hz	230 - 1 - 50/60
Electrical load	kW	3 max
Maximum solids	%	60 subject to viscosity
Height of unit	mm	1040
Width of unit*	mm	330
Depth of unit	mm	600

\*730mm including glassware and panel



[www.labtex.co.uk](http://www.labtex.co.uk)

## How the spray drying process works

Spray drying involves 3 fundamental processes: liquid atomisation, evaporation and separation/collection of the dried product.

The material to be dried is sprayed, in the form of small droplets, into a vertical drying chamber. At the same time a large volume of hot gas (air) is fed into the chamber to evaporate the liquid content of the sample. Heat and mass transfer takes place as the dispersed droplets are in direct contact with the hot air.

Dried product is transferred from the base of the drying chamber and conveyed to a high efficiency cyclone where powder and drying gas are separated.

The ESDTi atomising spray nozzle delivers fine atomisation at low pressures and low flow rates. This is advantageous for abrasive and high viscosity liquids. The internal mix nozzle design provides for the gas (air) and liquid to mix internally in the nozzle. Increases or decreases in the gas pressure can control the droplet size.

### Applications

The most successful drying applications for spray dryers are for solutions, slurries and pastes which:

- Cannot be dewatered mechanically
- Are heat sensitive and cannot be exposed to high temperatures for long periods
- Contain ultrafine particles that will agglomerate and fuse if dried in any state other than a dilution.

Spray drying is especially applicable to heat sensitive products due to the exceptionally short residence time in the dryer hot zone. Pharmaceuticals, foodstuffs, pigments and dyes, detergents, urea and plasma are all examples of products that have been successfully spray dried.

### CALgrafix Process Monitoring and Configuration Software – supplied as standard.

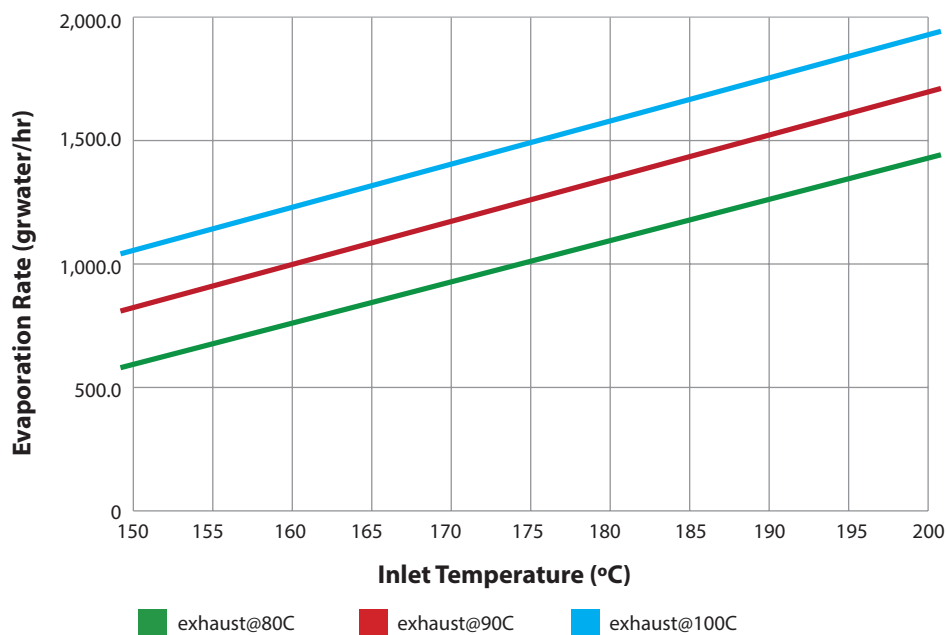
CALgrafix is designed for applications where there is a requirement to monitor and record temperature data. A real time graphic presentation keeps you informed of the temperature profile of your process.

CALgrafix features logging, charting, alarm indication, networking and configuration within a simple Windows™ based user interface.

#### Advantages of using CALgrafix:

- Access to detailed process data via the charting and logging features
- Simple set-up. No programming skills required
- Export logged data to other applications

### Evaporation Capacities ESDTi



For more information call us on  
**01484 600200**

# COMPONENTS AND ACCESSORIES



Main Chamber



Cyclone



Walking Stick



U Bend



Collection Bottle



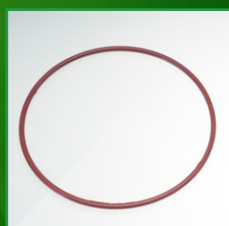
2" Clamp



SVL Clamp



Atomiser



O - Ring



Screw Cap



Pt100



Support Arm



Cyclone Clamp



Silicone Tube



6 mm Nylon Tube



Exhaust Tube



CALgrafix Software

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