



Aerosol Diffusion Dryer

Remove liquids from aerosol

- 2nd generation — improved drying performance
- Design minimises solid particle losses
- Wide range of aerosol science applications
- Use as part of generation process for calibration aerosols (e.g. PSL spheres)

Introduction

Many aerosol applications present a requirement to dry an aerosol, either as part of an aerosol generation process — for example: nebulisation of polystyrene latex (PSL) standard sized spheres, sodium chloride or other salts in water or oils in alcohol; or to characterise liquid / non-liquid components of the aerosol.

The use of a diffusion drier is well established in aerosol laboratories; the aerosol follows a direct path between inlet and exit, while the liquid component diffuses into an absorbent material.

Choice of Absorbent Material

The Cambustion aerosol diffusion dryer is compatible with both silica gel (for removing water) and activated carbon (for removing organic compounds) as absorbent materials.





Replaceable / Regenerable Absorbent Material

Over time the absorbing material becomes saturated and drying performance degrades.

The use of environmentally friendly, regenerable silica based desiccant (with zero cobalt content) uses a colour change to alert the user that the desiccant requires either regeneration / replacement. This is easily accomplished by the user without special tools.

Regeneration can be achieved by passing dry compressed air through the dryer, or by removing the desiccant and heating in an oven.

Performance

The DD385 has been sized for compatibility with a range of common aerosol generators and experiments. The actual performance of a diffusion drier is complex, depending on the size distribution, concentration and flow rate of the incoming aerosol.

Contact Cambustion for assistance with modelling your particular application.

Minimised Losses

A complex path for an aerosol would lead to high particle losses. By maintaining a straightforward path for the aerosol, both diffusion and impaction losses are minimised.

Specifications

Dimensions (h x w x l)	39 x 9 x 12 cm
Total loaded weight	2.4 kg
Silica dessicant weight	1.25 kg
Typical flow rates	0 – 6 lpm
Inlet / Outlet fittings	Supplied with 1/4 inch stubs for flexible tubing. Can be unscrewed to allow 1/8th BSP fittings to be attached
Operating temperature	+5 – +40 °C
Max pressure differential (aerosol - ambient)	100 mbar gauge
All specifications subject to change without notice	

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