全自動乾式粒度分布測定装置 Subsieve AutoSizer

概要

サブミクロンの粉をそのままで全自動測定

Subsieve AutoSizer（SAS）は、粒子の通気性を計測することによって粒子径を測定する装置です。この装置は幅広く利用された Fisher モデル 95 Sub-Sieve 粒度分布測定装置を改良し、後継機種として開発されました。今までご支持を頂いていた技術に自動化機能を追加し、データをコンピューター上に記録し表示することもできるようになりました。SAS は、粉末充填層の全域で圧力損失を原理として用いています。試料の高さを変えることによって、"間隙率"を変化させ、平均比表面積や粒子径が、カルメン方程式に従い圧力低下関数として測定することができます。

特長

- 測定範囲：0.2 ～75 μm
- 優れたソフトウェアで、システムの制御と操作、報告、データ収集と処理は標準化設定が可能
- 迅速かつ簡単にサンプルをセットアップ
- 簡単モード で " スタート"ボタンを押すだけで測定開始
- リアルタイムデータを表示
- 豊富なレポート印刷のフォーマット
- ソフトウァアのセキュリティ機能を用意（オプション）

外寸・重量 ：55cm（H） 50cm（W） 38cm（D）、28kg

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SUBSIEVE AUTOSIZER (SAS)

H·E·L
better chemistry – faster

WWW.HELGROUP.COM

Powder Sizing by Air-Permeability

The original Model 95 Fisher Subsieve Sizer — a trusted workhorse, if a little outdated

Improved Performance — the same data. The Subsieve Autosizer adds automated functions and electronically recorded and presented data, to an established particle sizing technique.

The HEL **SAS** is a new entry to the established field of air-permeability particle sizing. It has been developed as a direct and improved successor to the widely used Fisher Model 95 Sub-Sieve Sizer (**FSSS**).

Technical Specifications

Size Range:	0.2 - 75 micron
Porosity Range:	0.2 - 0.9
Compression Accuracy:	<0.05 mm
Power:	1A
External Dimensions:	50cm (W) x 38cm (D) x 55cm (H)
Weight:	28kg

Superior Software - Complete Control

HEL Software sets a world-wide standard for instrument operation, data acquisition and handling, reporting and systems integration.

Quick and Easy Set-up

Simple step by step set-up, easy to follow; ensuring that no parameters are over looked.

Easy Mode

A "Start" button runs the complete measurement to pre-selected requirements.

Real Time Data Display

Data can be viewed as it is acquired simplifying method development by ensuring that the user is never divorced from the measurement.

Report Generation

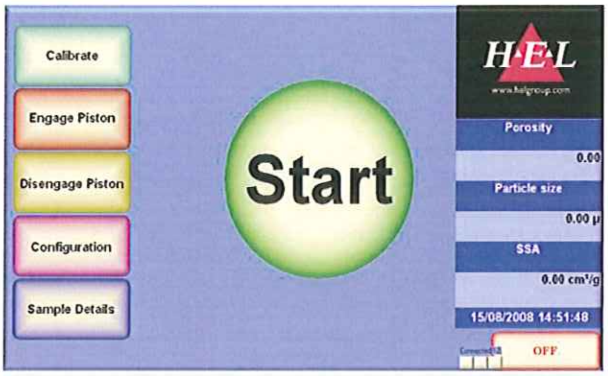
Company logos, typestyles and formats can be incorporated into printouts.

Security Features

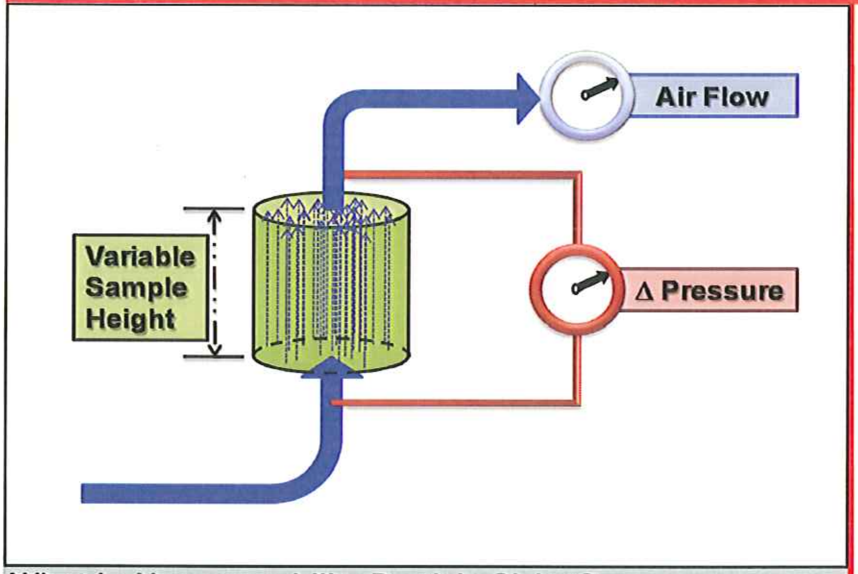
Optional Password Protection ties samples to user ID's and protects plans from unauthorised changes.

Why Air-permeability Particle Sizing?

Air-permeability techniques generate average Specific Surface Area (SSA) data for a sample of powder. The SSA of particles has a significant impact on the physical properties of powders and has been the focus of much attention from such diverse communities as the pharmaceutical, paint, toner and geologic professions. The SAS has particular applicability to the Pharmaceutical Quality Control field where the quick and reproducible SAS-derived Surface Areas can be used to control batch-to-batch variation in important properties such as bioavailability and drug delivery.

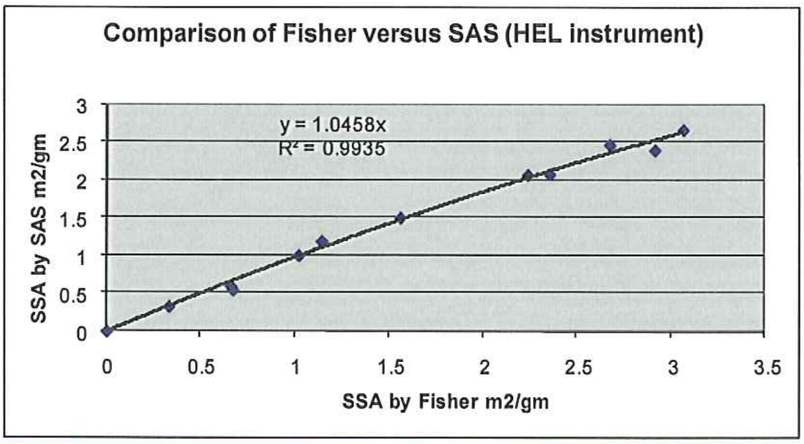


A touch screen interface makes operation and report generation simple, with the option to insert company logos and typestyles, and to use various formats when printing.



What is Air-permeability Particle Sizing?

The SAS uses the principle of Pressure drop across a packed bed of powder. By varying the Sample Height and hence the "porosity" of the bed, average Surface Area and hence Particle Size can be determined as a function of Pressure drop in accordance with the Carmen equation.



Direct comparison of SAS™ & FSSS results

Side-by-side trials have been carried out using both old and new samples, with cooperation from many different and experienced users of the FSSS. Typical results are shown in the graphs on the right, where mean particle size data from the two instruments is compared for 11 different powders of different sizes. There is exceptional correlation between the two sets of data.

Another more extensive and independent study by Astrazenca in England, has come to the same conclusion, after using it at various sites and by different individuals. An example of results published by John Sherwood (also of Astrazenca) are shown in graph on the bottom left where a line of best fit has been drawn through the results. For a perfect match, the slope would be 1; the actual slope (0.9935) is within the bound of experimental error. These tests were performed side by side on the two instruments, literally one after the other and using exactly the same mass of sample in each case.

Repetitive testing of the same sample, to give a measure of reproducibility (precision) has also been reported by the same authors, again using the two devices side-by-side to give the specific surface area. For the first sample, the FSSS gave a mean of 1.061 compared with 1.125 by the SAS with standard deviations of 0.022 and 0.060 respectively. A second sample gave a means of 2.718 and 2.750 and standard deviations of 0.054 and 0.021, for the FSSS and SAS respectively. In both cases, 10 measurements were made on each sample with both devices.

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