

# Autosorb-3B

## Automatic Surface Area and Pore Size Analyzer

**The Autosorb-3B**, is a highly efficient, cost effective, 3-sample system designed for laboratories with higher test volumes needing multiple sample capability.

- \* This means multiple sample preparation as well as simultaneous analysis of samples.
- \* This means the flexibility to do multiple methods of analyses at the same time (single point or multipoint B.E.T. or full isotherm).
- \* It also means uncompromised quality in technical performance and analytical results.



**Degasser Side**

**Analyzer Side**

### Degasser Side

The degasser side of the Autosorb-3B features three sample preparation stations. Its independent vacuum system adds important flexibility by permitting sample preparation concurrently with sample analysis. Each preparation station provides an independent heating control with temperature readout. A vacuum thermocouple gauge is provided to determine when each sample is completely degassed. A built-in, long-life cold trap keeps the vacuum system clean and free of degas by-products. This also prevents sample contamination due to back-streaming of pump oil vapors.

### Analyzer Side

The analyzer side of the Autosorb-3B provides three sample measurement stations. Each station operates automatically, independently and simultaneously.

Quantachrome's proprietary *BatchStart* feature provides parallel processing for fast initialization of analyses. Analysis times are further reduced by the *MaxiDose* feature that automatically and intelligently adjusts the amount of gas introduced in accordance with sample characteristics.

Standard software provides automatic data acquisition, real-time status display and comprehensive graphical and tabular reporting capabilities using Windows® software.

Data reduction includes multipoint B.E.T. surface area, Langmuir surface area, Dubinin-Radushkevich surface area, total pore volume, B.J.H. pore size distribution plus t-plots and the MP technique for micropore analysis.

Options for low pressure data acquisition expand the instruments capabilities to include measurements of low surface area materials using krypton gas or for detailed micropore distribution studies by a wide range of modern techniques such as Density Functional Theory and the Korvath-Kawazoe method.

# Autosorb-3B Specifications

<b>PRESSURE*</b>	<b>STANDARD</b>	<b>KRYPTON/MICROPORE option</b>
Range	0 - 1,000 torr	0 - 10 torr
Accuracy	0.1% full scale	0.15% reading
Linearity	0.05% full scale	0.15% reading
Minimum resolvable absolute pressure	0.015 torr	0.0002 torr
Minimum resolvable relative pressure P/P <sub>0</sub>	2 x 10 <sup>-5</sup> (nitrogen)	2.6 x 10 <sup>-7</sup> (nitrogen) 7.6 x 10 <sup>-5</sup> (krypton)
Ultimate vacuum	Less than 0.001 torr	5 x 10 <sup>-9</sup> torr

\*Specifications by transducer manufacturer

## ADSORBATES

Nitrogen or any other non-corrosive gas used with appropriate coolant

## SURFACE AREA RANGE

<0.05 m<sup>2</sup>/g with N<sub>2</sub> (no known upper limit).

<0.0005 m<sup>2</sup>/g with Kr

## PORE ANALYSIS

Detectable pore volume limit: less than 0.0001cc/g

Pore diameter range with nitrogen: 3.5 - 4000E

## DEGASSER

Vacuum: Gauge & controls for cell isolation & fine/coarse rate adjustment

Temperature: 420°C. maximum with selection and digital readout in steps of 1°C.

## PHYSICAL

Width: 25.5 inches, 64.8 centimeters

Height: 45.5 inches, 115.6 centimeters

Depth: 30.0 inches, 76.2 centimeters

Weight: 335 pounds, 152 kilograms

## ELECTRICAL

100 - 240 V, 50/60 Hz

10 - 45°C operating range at 90% maximum relative humidity

## ACCESSORIES

Required: Adsorbate gas and helium gas (minimum purity of 99.999%)  
Coolant (liquefied gas, slurries, ice water, etc.)  
IBM® compatible personal computer with serial interface

Optional: Rolling cabinet (20 in/51 cm height) for floor standing operation  
Uninterruptable power supply

## PERFORMANCE FUNCTIONS

For more detailed information see [Autosorb-6B](#)