

# PMI **Q-BET** *Surface Area Analyzer*

## Applications

An adsorbed film invariably forms a clean surface exposed to a gas. Adsorbed films also form on pore surfaces of porous materials. The amount of adsorbed gas on a surface at a constant temperature depends on pressure. The PMI Quick-BET measures the pressure and computes the number of moles absorbed from the difference between the number of moles of the gas allowed to flow into the system and the final number of moles of gas left in the system. The BET theory of gas adsorption is used to compute surface area from the measurement of the amount of adsorption as a function of pressure.



## Operating Procedure

- The sample is placed in the sample chamber. Mass and density of the sample are entered in the test settings of the fully automated instrument.
- The sample is evacuated slowly to remove any adsorbed gasses.
- Once degassing is complete, the user is prompted to install liquid nitrogen dewar flask. The gas is allowed to flow into the system.
- The flow rate and gas pressure are constantly measured and surface area is reported at the end of the test.

## Features

- Performs surface area (single point and multi point) analysis.
- Pore volume can be measured.
- Very fast, as little as four minutes.
- Highly reproducible.
- In-situ degassing of samples.
- Automated calibration routines.
- Automated operation and minimal operator involvement.
- Very little maintenance.
- Robust & inexpensive.

## Specifications

**Pressure Accuracy:** 0.15% of reading

**Test Pressure:** 100, 200 and 500 psi instrument versions (700, 1400, 3500 kPa instrument versions)

**Pressure and Flow Resolution:**  
1/60,00 of full scale (1 part in 60,000)

**Maximum Pore Size Detectable:** 500  $\mu\text{m}$

**Minimum Pore Sizes Detectable:**

**Flow Rates:** Up to 200 SLPM (standard liters per minute)

**Sample Size:**

Standard: 0.25" - 2.5" diameter (up to 1.5 " thick).

Standard: 5 mm - 60 mm diameter (up to 40 mm thick).

Others available

**Sample Geometry:** Sheets, Rods, Tubes, Hollow Fibers, Cartridges, Powders, etc.

## Other Products

Average Fiber Diameter Analyzer  
Bubble Point Tester  
Capillary Flow Porometer  
Capillary Condensation Flow Porometer  
Complete Filter Cartridge Analyzer  
Clamp-On Porometer  
Compression Porometer  
Custom Porometer  
Cyclic Compression Porometer  
Envelope Surface Area Analyzer  
Filtration Media Analyzer  
High Flow Porometer  
Integrity Analyzer

In-Plane Porometer  
Microflow Porometer  
Nanopore Flow Porometer  
QC Porometer  
Diffusion Permeameter  
Gas Permeameter  
Liquid Permeameter  
Vapor Permeameter  
Water Vapor Transmission Analyzer  
Liquid Extrusion Porosimeter  
Mercury/Nonmercury Intrusion Porosimeter  
Vacuapore  
Water Intrusion Porosimeter (Aquapore)

BET Liquisorb  
BET Sorptometer  
Gas Pycnometer  
Mercury Pycnometer

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