



## Catalyst Surface Area Analyzer (BET) PorositySense VS series

BET PorositySense VS series are instruments used to measure the specific surface area of powders, porous materials, and granular solids based on the Brunauer–Emmett–Teller (BET) theory. By analyzing gas adsorption on the material's surface, these analyzers provide precise data on surface area, pore volume, and porosity. In the polymer industry, BET analysis is commonly used for characterizing polymer powders, fillers, porous membranes, and catalyst supports, aiding in quality control, material development, and performance optimization.

Standards: ISO 9277, ASTM D3663, ASTM D4567



## Key Features

### Vacuum System:

- Unique monolithic manifolds system can decrease connecting points apparently, reduce gas leakage and improve ultimate vacuum.
- Modularity design can configure as customer requests, benefits future functions extension and instrument maintenance.
- The atlas copco brand bipolar vacuum pump, low noise, stable working, completely prevent oil-returning; range can reduce errors in low vacuum.
- Original stepping coolant level probe system can ensure the coolant level unchanged during the whole analysis process, completely eliminate errors caused by dead volume chngement.
- Pioneered gas outlet and inlet control system can efficiently prevent sample splash in vacuuming and gas input process, guarantee clean manifolds and steady sample mass, avoid zero and liner drifting caused by transducer's macro-change.

### Control System:

- Branded programmable pneumatic valve system has a strong anti-interference ability, is convenient for installation and uninstallation.
- Separated analysis and pretreatment manifolds can prevent foreign matters to contaminate inner pipelines.

## Specifications

| Model               |                   | PorositySense VS 2800                                                                | PorositySense VS 2802         |
|---------------------|-------------------|--------------------------------------------------------------------------------------|-------------------------------|
| Sample Pretreatment | Ports             | 2 pretreatment/ degassing ports                                                      |                               |
|                     | Temp. Range       | RT to 400 °C                                                                         |                               |
|                     | Vacuum Pressure   | Vacuuming to 0.5 pa                                                                  |                               |
|                     | Working Mode      | Fully controlled by software                                                         |                               |
| Sample Testing      | Principle         | Volumetric Nitrogen Adsorption                                                       |                               |
|                     | Ports             | 2 testing ports work alternately                                                     | 2 testing ports work parallel |
|                     | Ultimate Pressure | 4x10 <sup>-2</sup> Pa                                                                |                               |
|                     | Accuracy          | Surface Area Repeatability ≤ ± 1.9%<br>Pore Size Repeatability ≤ 0.02nm              |                               |
|                     | Range             | Surfac Area: 0.0005 m <sup>2</sup> /g to no upper limit<br>Pore Size: 0.35nm - 500nm |                               |

|             |                                                                                                                                         |                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|             | Partial Pressure                                                                                                                        | P/P0 accuracy range 5x10 <sup>-6</sup> - 0.998                                            |
|             | Gases                                                                                                                                   | N2, Kr, CO2, Ar, purity 99.999%                                                           |
|             | Working Mode                                                                                                                            | Fully controlled by software                                                              |
| Data Report | single-point BET, multi-point BET, Langmuir surface area, t-plot surface area, STSA, true density, BJH mesopore, CO2 ice water, DR & DA |                                                                                           |
| Hardwares   | Pressure Sensors                                                                                                                        | 0-3 Bar/1 pc                                                                              |
|             | Sensors Accuracy                                                                                                                        | 0.15% better than full scale                                                              |
|             | Pipelines                                                                                                                               | Integrated vacuum pipelines                                                               |
|             | Valves                                                                                                                                  | Solenoid Hardware valves + O-rings                                                        |
|             | Vacuum Pump                                                                                                                             | Mechanical pump                                                                           |
|             | LNT Dewar                                                                                                                               | 4L stainless steel Dewar, can work over 72 hours without intervention                     |
|             | Sample Tubes                                                                                                                            | Quartz material                                                                           |
|             | Dimension                                                                                                                               | Net: 75x60x90 cm, 80 kgs<br>Gross: pkg 1: 92x73x110cm, 115kgs; pkg 2: 60x75x80cm, 70 kgs. |

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