
Surface area and porosity are important physical properties that influence the quality and utility of many materials and products. Therefore it is critically important that these characteristics be accurately determined and controlled.

High Sample Throughput and Analytical Versatility

The TriStar II is a fully automated, three-station, surface area and porosity analyzer that delivers high-quality data at an affordable price. The TriStar II also features a Krypton Option, allowing measurements in a very low surface area range.

A Small Footprint Packed with Features

• Three analysis ports can operate simultaneously and independently of one another. Three BET surface area measurements can be performed in less than 20 minutes.

• The TriStar II accommodates the use of nitrogen, argon, carbon dioxide, and other non-corrosive gases such as butane, methane, or other light hydrocarbons. A Krypton Option can extend surface area measurements to as low as 0.001 m²/g.

• A dedicated $P_o$ port is standard, allowing the measurement of saturation pressure on a continuous basis. Saturation pressure can be entered manually, measured continuously, or collected over the sample.

• Incremental or fixed dosing routines prevent overshooting pressure points while minimizing analysis time.

• Free space can be measured, calculated, or manually entered providing maximum flexibility in accommodating special sample types and emphasizing speed when needed. Helium is not required.

• The TriStar II can collect up to 1000 data points. Fine details of the isotherm can be observed and recorded providing high resolution and revealing pore structure details.

• Optional sample preparation devices are available combining flowing gas and/or vacuum with heat to remove atmospheric contaminants, such as water vapor and adsorbed gas, from the surface and pores of the sample.
Tabular and Graphical Reports:
• Single and multipoint BET surface area
• Total pore volume
• Langmuir surface area and Isotherm reports
• t-Plot
  - Harkins and Jura Thickness Equation
  - Halsey Thickness Equation
  - Carbon STSA
  - Broekhoff-de Boer
  - Kruk-Jaroniec-Sayari
• BJH adsorption and desorption
  - Standard
  - Kruk-Jaroniec-Sayari correction
• Dollimore-Heal adsorption and desorption
• Mesopore
  - Volume and area distributions by pore size
• MP-Method
• HK
• Saito-Foley
• Chang-Yang
• DFT pore size
• DFT surface energy
• Summary Report
• SPC reports
• Validation reports

Operating Software
The TriStar II Windows interface provides a familiar environment for the user. It is easy to collect, organize, archive, reduce isotherm data, and store standardized sample information for later use. The reports may be generated to screen, paper, or spreadsheet file. Cut-and-paste graphics, scalable and editable graphs, and customized reports are easily generated.

In addition to controlling instrument operation, the Windows software also reduces the isotherm data collected during analysis. The reduced data can be reviewed or printed in a variety of easy-to-interpretable tabular and graphical reports.
### Specifications

#### Pressure Measurement

<table>
<thead>
<tr>
<th></th>
<th>Absolute</th>
<th>Relative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Range: 0 to 950 mmHg • Resolution: Within 0.05 mmHg</td>
<td>P/P&lt;sub&gt;o&lt;/sub&gt; range: 0 to 1.0 P/P&lt;sub&gt;o&lt;/sub&gt; • Resolution: &lt; 10^-4</td>
</tr>
<tr>
<td></td>
<td>Accuracy: Within 0.1% of full scale • Linearity: &lt; ± 0.1% of span</td>
<td></td>
</tr>
</tbody>
</table>

#### Analysis

<table>
<thead>
<tr>
<th></th>
<th>Specific Surface Area</th>
<th>Total Surface Area</th>
<th>Pore Volume</th>
<th>Dewar Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From 0.01 m²/g, nitrogen unit • From 0.001 m²/g, krypton unit</td>
<td>From 0.1 m², nitrogen unit • From 0.01 m², krypton unit</td>
<td>From 4 × 10^-6 cm³/g</td>
<td>Up to 40 hours</td>
</tr>
</tbody>
</table>

#### Adsorptive Gases

<table>
<thead>
<tr>
<th></th>
<th>Nitrogen Unit</th>
<th>Krypton Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nitrogen; argon, carbon dioxide, or other non-corrosive gases; butane, methane, or other light hydrocarbon vapors; Oxygen can also be used only with an appropriate vacuum pump.</td>
<td>Same as Nitrogen unit, plus the capability to perform krypton surface area analyses at lower pressures</td>
</tr>
</tbody>
</table>

#### Environment

<table>
<thead>
<tr>
<th></th>
<th>Temperature</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 and 35 °C (50 to 95 °F), operating • 0 to 50 °C (0 to 122 °F), non-operating</td>
<td>20 to 80% relative, non-condensing</td>
</tr>
</tbody>
</table>

#### Physical

<table>
<thead>
<tr>
<th></th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>74 cm</td>
<td>40 cm</td>
<td>51 cm</td>
<td>37 kg</td>
</tr>
</tbody>
</table>

#### Electrical

<table>
<thead>
<tr>
<th></th>
<th>Voltage</th>
<th>Power</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100/120, 220/240 VAC</td>
<td>150 VA, maximum</td>
<td>50 to 60 Hz</td>
</tr>
</tbody>
</table>

*Due to continuous improvements, specifications are subject to change without notice.*

---

**Micromeritics Instrument Corporation**

4356 Communications Drive, Norcross, GA 30093 USA

To request a quote or additional product information, visit [micromeritics.com](http://micromeritics.com)

Contact your local Micromeritics sales representative or our Customer Service Department at 770-662-3636