

# ASAP 2020™ Chemisorption

|  |  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
|--|--|----------------------|---|---------------------|--------------|--|---------------|-----------------|-------------------------|----------------|-------------------------|----------------|-------------------------|
| <p><b>Pressure Measurement</b></p>                   | <p><b>Range:</b> 0 to 950 mmHg</p> <p><b>Resolution:</b></p> <table border="0"> <tr> <td>1000-mmHg Transducer</td> <td>0.001 mmHg (Analysis system)<br/>1 mmHg (Degas system)</td> </tr> <tr> <td>10-mmHg Transducer*</td> <td>0.00001 mmHg</td> </tr> <tr> <td>1-mmHg Transducer**<br/>(optional for high stability)</td> <td>0.000001 mmHg</td> </tr> </table> <p><b>Accuracy</b> (Analysis system only):<br/>Includes nonlinearity, hysteresis, and nonrepeatability. Transducer manufacturer's specifications.</p> <table border="0"> <tr> <td>1000-mmHg Range</td> <td>Within 0.15% of reading</td> </tr> <tr> <td>10-mmHg Range*</td> <td>Within 0.15% of reading</td> </tr> <tr> <td>1-mmHg Range**</td> <td>Within 0.12% of reading</td> </tr> </table> <p>* High Vacuum systems<br/>**Micropore systems</p> | 1000-mmHg Transducer | 0.001 mmHg (Analysis system)<br>1 mmHg (Degas system) | 10-mmHg Transducer* | 0.00001 mmHg | 1-mmHg Transducer**<br>(optional for high stability) | 0.000001 mmHg | 1000-mmHg Range | Within 0.15% of reading | 10-mmHg Range* | Within 0.15% of reading | 1-mmHg Range** | Within 0.12% of reading |
| 1000-mmHg Transducer                                 | 0.001 mmHg (Analysis system)<br>1 mmHg (Degas system)  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| 10-mmHg Transducer*                                  | 0.00001 mmHg   |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| 1-mmHg Transducer**<br>(optional for high stability) | 0.000001 mmHg  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| 1000-mmHg Range                                      | Within 0.15% of reading  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| 10-mmHg Range*                                       | Within 0.15% of reading  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| 1-mmHg Range**                                       | Within 0.12% of reading  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| <p><b>Vacuum System</b></p>                          | <p><b>Vacuum Pump:</b> Mechanical, two-stage, for analysis; optional for degas. Ultimate vacuum <math>5 \times 10^{-3}</math> mmHg. Dry pumps available for systems equipped with optional High Vacuum pump.</p> <p><b>High Vacuum Pump:</b> (if installed): Less than <math>3.8 \times 10^{-9}</math> mmHg. Ultimate vacuum measured by pump manufacturer according to Pneurop Standard 5608.</p> <p><b>Vacuum Pump Exhaust</b> <b>Analysis:</b> a 12.5-mm (1/2-in.) fitting is provided for the analysis pump to allow connection to a fume hood.<br/><b>Degas:</b> An oil mist filter is provided.</p>  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| <p><b>Manifold Temperature Transducer</b></p>        | <p><b>Type:</b> Platinum resistance device (RTD)</p> <p><b>Accuracy:</b> <math>\pm 0.02</math> °C</p>  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| <p><b>Degas System</b></p>                           | <p><b>Temperature Range:</b> Ambient to 450 °C</p> <p><b>Selection:</b> 1 °C increments</p> <p><b>Accuracy:</b> Within <math>\pm 4</math> °C of set point at thermocouple</p> <p><b>Backfill Gas:</b> User-selectable, typically helium or nitrogen</p>  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| <p><b>System Capacity</b></p>                        | <p><b>Sample Preparation:</b> 2 degas ports (optional)</p> <p><b>Analysis:</b> 1 sample port</p> <p><b>Total Operating Capacity:</b> Up to two analysis units can be controlled independently by one computer</p>  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| <p><b>Sample Temperature Control System</b></p>      | <p><b>Temperature Range:</b> 10° above ambient to 1100 °C</p> <p><b>Rate Selection:</b> Heat ramp rate controllable from 1 to 20 °C per minute to 800 °C, 10 °C per minute to 1000 °C, 5 °C per minute to 1100 °C</p> <p><b>Temperature Selection:</b> 1 °C increments</p> <p><b>Accuracy:</b> Within <math>\pm 5</math> °C</p> <p><b>Stability:</b> Within <math>\pm 1</math> °C (Furnace controller manufacturer's specifications.)</p>  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |
| <p><b>Sample Tube Size</b></p>                       | <p>Flowthru™ sample tube stems are 1/2-in. (12.5-mm) OD with exhaust path for flow-through preparation. Standard flowthru tubes are quartz for use up to 1100 °C.</p>  |                      |   |                     |              |  |               |                 |                         |                |                         |                |                         |

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|---------------------------------------|---|
| <b>Environment</b>                    | Temperature: 10 to 30 °C operating<br>-10 to 55 °C storing or shipping<br>Humidity: 20 to 80% relative, noncondensing   |
| <b>Electrical</b>                     | Voltage: 100, 115, 230 VAC ±10%<br>Frequency: 50/60 Hz<br>Power: 700 VA, operating  |
| <b>Gases</b>                          | Recommended: Helium for free-space measurement and flowing preparation. Oxygen and hydrogen for flowing preparation. Hydrogen, carbon monoxide, and others for analysis.  |
| <b>Computer Hardware and Software</b> | Pentium 333 MHz computer (or equivalent)<br>CD-ROM drive<br>128 megabytes of main memory<br>1-gigabyte hard drive<br>SVGA monitor (800 x 600 minimum resolution)<br>Windows Vista, Windows 2000, or Windows XP Professional |
| <b>Physical</b>                       | Height: 99 cm (39 in.)<br>Width: 85 cm (33.5 in.)<br>Depth: 61 cm (24 in.)<br>Weight: 115 kg (250 lbs)  |

*In keeping with a policy of ongoing product improvement, specifications are subject to change without notice.*



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