

## Uninterruptible Power Supply for Use with the ASAP 2020

Many companies operating analytical instrumentation experience an occasional power failure. Most such failures last only a few minutes. However, even a momentary loss of power to an operating instrument can result in loss of data. Since some analyses can last several days, there is a potential loss of many days worth of work. Under such circumstances, you may wish to use an Uninterruptible Power Supply (UPS) to protect your system during brief power failures. The information in this document will assist you in choosing an appropriate UPS to use with your Micromeritics instrument. Data collected during an analysis are stored in the embedded processor of the instrument. The computer does not require power-fail protection, although it is usually good practice to have it. Micromeritics neither sells nor recommends manufacturers of UPS systems.

### Rating a UPS for the Analyzer

The ASAP 2020 instrument is rated at 800 VA. This rating supports an ASAP 2020 with all options installed, which includes Chemisorption and a SmartVac degassing system with a dry high vacuum pump system. Many UPS systems are available commercially which adequately support the ASAP 2020 for several minutes or more, depending upon what the instrument is doing, and how many options are installed. For example, a 1000 VA rated UPS will supply full power for approximately six minutes, or half power for 15 to 20 minutes. Similarly, a 2000 VA UPS will provide full power to an ASAP 2020 for approximately 30 minutes.

### Vacuum Pumps

The instrument continues to operate using power from the UPS, at least until an extended evacuation is performed. This is because the foreline vacuum pumps do not receive power from the instrument; they are plugged into the laboratory power system. Foreline vacuum pumps provided by Micromeritics are either oil-sealed rotary vane pumps or dry diaphragm pumps, depending upon the options installed in the instrument. The dry pump is rated at 115 Watts, and the oil-sealed pump at 160 Watts. If you provide your own vacuum pump, the power requirement may be different. There is further difficulty with selecting a UPS for the vacuum pumps. The motors of such pumps draw a heavy starting current when first turned on. For example, the oil-sealed pump supplied by Micromeritics may draw a starting current of 5 Amps (at 120 volts) for up to a second. Therefore, the UPS would require a rating of 600 VA for each pump, unless the UPS manufacturer has allowed for start-up surge currents.