

# SASS<sup>®</sup> 4000

## Aerosol Concentrator

**COLLECT Airborne Pathogens, Virus-Sized Particulates, Bacteria and Spores**



*SASS 4000 high-volume aerosol concentrator*

The SASS<sup>®</sup> 4000 is a highly efficient, high-volume aerosol concentration device. Many applications require the collection and analysis of aerosol particles, ranging from counter-terrorism to epidemiology, medicine, and agriculture. These applications typically involve the monitoring or collection of airborne plant, animal or human pathogens. But aerosol sample analysis is frequently plagued by four problems:

- The targeted pathogen is present at a very low concentration;
- The collection process involves too small an air sample to be statistically valid;
- The temperature is below freezing; and/or
- Available bioassay methods are not sensitive enough.

The SASS<sup>®</sup> 4000 concentrator solves these problems by processing large volumes of ambient air, and continuously transferring particulates from this

primary air stream to a much smaller secondary airflow. As a result, the secondary flow can reach aerosol concentrations that are 4X to 15X higher than present in the incoming air. The concentrator therefore amplifies the ambient aerosol concentration, while retaining most of the particles that were present in the incoming airflow in the secondary flow. Also, if a wet sampler is used, heating of the secondary air requires much less power than would be required to keep the primary air above freezing.

Particles are routed into the secondary flow by forcing primary circuit air to circulate through specially shaped channels where centrifugal force and particle momentum are used to isolate and concentrate the particles. The interior structure has been designed so that the smallest flow cross-section is a channel 0.6 mm wide x 6.35 cm long, providing good resistance to clogging by larger particles. A coarse screened cover with 5.4 mm square openings further restricts the entrance of large debris.

**U.S. Patent Nos.:** 9791353, 10677689

For complete technical information, visit [www.resrchintl.com](http://www.resrchintl.com).

### FEATURES

- No moving parts, other than the primary fan
- Minimal maintenance
- Wide operating temperature
- Clog resistant
- Sampled air volume is maximized to improve collection statistics

### APPLICATION AREAS

- Environmental
- Air quality
- Agriculture
- Public Health
- Medical facilities
- Homeland security
- Military
- Power plants

Specifications	
<b>Primary airflow</b>	4000 liters/min is sampled uniformly from around the concentrator's circumference.
<b>Secondary airflow</b>	30-360 LPM at +0.4 cm of water static head maximum; aerosol concentrate typically delivered to a wet or dry sampler such as the SASS 2300 or SASS 3100, respectively.
<b>Aerosol range</b>	Aerosols greater than 0.5 microns in diameter with a particle density of 1.0 g/cc.
<b>Secondary airflow connection</b>	Hose barb fitting on base surface for nominal 3.8 cm ID hose.
<b>Concentration enhancement</b>	4 - 15 times typical for aerosols greater than 0.5 microns in size. Performance is also influenced by secondary airflow- request specific data for your application.
<b>Overall size</b>	38 cm high x 25.4 cm diameter max.
<b>Weight</b>	6.32 kg (13.9 lbs.)
<b>Operating temperature range</b>	-40°C to 70°C
<b>Power consumption</b>	<ul style="list-style-type: none"> <li>• 160 watts at 24VDC; Brushless drive motor with 70,000 hour life at 40°C.</li> <li>• 100 to 230 VAC lump-in cord AD/DC converter supplied.</li> </ul>
<b>Sound level</b>	72 dBA @ 1 meter radius on inlet equatorial plane.
<b>Mounting</b>	Quick-detach tripod legs; 0.53m to 1.46m adjustable height.
<b>Accessories</b>	Hard shell carrying case.

*Research International reserves the right to change specifications without prior notice.*

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