SASS® 4000

High-Volume Aerosol Concentration

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

- Medical facilities
- Public health
- Academic research
- Military
- Power plants
- Agriculture
- Environmental
- Homeland security

The SASS® 4000 is a highly efficient, high-volume aerosol concentration device. Many applications require the collection and analysis of aerosol particles, ranging from counterterrorism 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.
- Available bioassay methods are not sensitive enough.

A 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.

SASS® 4000 Specifications

Primary airflow	4000 liters/min is sampled uniformly from around the concentrator's circumference.
Secondary airflow	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.
Aerosol range	Aerosols greater than 0.5 microns in diameter with a particle density of 1.0 g/cc.
Secondary airflow connection	Hose barb fitting on base surface for nominal 3.8 cm ID hose.
Concentration enhancement	4 - 15 times typical for aerosols greater than 0.5 microns in size. Performance also influenced by secondary airflow. Request specific data for your application.
Overall size	38 cm high x 25.4 cm diameter max.
Weight	6.32 kg (13.9 lbs.)
Operating temperature range	-40°C to 70°C
Power consumption	160 watts at 24VDC; brushless drive motor with 70,000-hour life at 40°C. 100 to 230 VAC lump-in cord AD/DC converter supplied.
Sound level	72 dBA @ 1 meter radius on inlet equatorial plane.
Mounting	Quick-detach tripod legs; 0.53m to 1.46m adjustable height.
Accessories	• Hard shell carrying case • Electret sample filter assembly • Connector hoses for use with SASS 3100 or SASS 2300 air sampler

CBRN International reserves the right to change specifications without prior notice.