SASS® 4100

Two-Stage Filter-Based Collector

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
- Organism viability is maximized by using low air flow velocities and a bulk electret filter media
- HEPA filter available for radiological sampling

Application Areas

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

The SASS® 4100 is a highly efficient, two-stage filter-based aerosol collection 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, or radiological aerosols. 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.

The SASS 4100 processes over 4000 liters/minute of ambient air that is continuously sampled as a primary air stream. Particulates in this air stream are transferred to a much smaller secondary air stream using centrifugal and virtual impaction principles. Particles are then routed into the secondary flow by forcing primary circuit air to circulate through specially shaped channels where centrifugal force and particle momentum isolate and concentrate the particles. The secondary flow can reach aerosol concentrations that are 4X to 15X higher than in the incoming air. The two-stage sampler amplifies and slows down the captured ambient aerosol particles prior to their collection. This aerosol concentrate is collected by directing the secondary air through an electret bulk filter media; devoid of particles, the secondary air is re-introduced into the primary air flow.

SASS® 4100 Specifications

Primary Airflow	4,000 liters/min sampled uniformly from around the concentrator's circumference.
Secondary Air Collection Rate	**HEPA-style filter:** 49 LPM. **Bioaerosol filter:** 265 LPM.
Filter Collection Efficiency	**HEPA-style filter:** More than 95% for > 0.3 µm diameter. **Bioaerosol filter:** 50% at 0.5 micron diameter.
Filter Media Size	4.4 cm active diameter filter, mounted in 6.0 cm diameter injection-molded holder.
Filter Mass And Composition	**HEPA-style filter:** 2.2 mg/cm^2 for active media; 8.6 mg/cm^2 including backing scrim **Bioaerosol filter:** 12 mg/cm^2 Both filters are composed of polypropylene electret micro-fiber.
Filter Mount	Hat-shaped fixture that locks onto the device's baseplate
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
Operating Life	ECM fan rotor is only moving part. A bearing life of 70,000 hours is expected at 40°C.
Power Consumption	• 160 watts for ECM drive motor at 24 VDC. • 100 to 230 VAC lump-in cord AC/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 (for stand-alone operation)

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