

# SASS<sup>®</sup> 4100



## Two-Stage Aerosol Collector

### High-volume, filter-based air sampling

#### 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

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

**The SASS<sup>®</sup> 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 three problems:

- Very low concentration levels of the target aerosol
- Collection may involve too small an air sample to be statistically valid
- Available assay methods may not be 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 the circuit air through specially shaped channels where centrifugal force and particle momentum isolate and concentrate the particles.

**Amplified concentration** 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.

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## SASS 4100 SPECIFICATIONS

<b>Primary Airflow</b>	4,000 liters/min sampled uniformly from around the concentrator's circumference.
<b>Secondary Air Collection Rate</b>	HEPA-style filter: 49 LPM Bioaerosol filter: 265 LPM
<b>Filter Collection Efficiency</b>	HEPA-style filter: Over 95% for >0.3 µm diameter. Bioaerosol filter: 50% at 0.5 micron diameter.
<b>Consumables</b>	Electret filters ( <i>purchased separately</i> )
<b>Filter Media Size</b>	4.4 cm active diameter filter, mounted in 6.0 cm diameter injection-molded holder.
<b>Filter Mass And Composition</b>	HEPA-style filter: 2.2 mg/cm <sup>2</sup> for active media; 8.6 mg/cm <sup>2</sup> including backing scrim Bioaerosol filter: 12 mg/cm <sup>2</sup> Both filters are composed of polypropylene electret micro-fiber. Purchased separately.
<b>Filter Mount</b>	Hat-shaped fixture that locks onto the device's baseplate
<b>Dimensions (excluding tripod legs)</b>	38 cm high x 25.4 cm diameter max.
<b>Mounting</b>	Quick-detach tripod legs; 53 cm to 146 cm adjustable height.
<b>Height with Tripod Legs</b>	90 cm to 184 cm (user adjustable)
<b>Weight</b>	6.32 kg (13.9 lbs.) excluding tripod legs
<b>Operating Temperature</b>	-40°C to 70°C
<b>Operating Life</b>	ECM fan rotor is only moving part. A bearing life of 70,000 hours is expected at 40°C.
<b>Power Consumption</b>	160 watts for ECM drive motor at 24 VDC. 100 to 230 VAC lump-in cord AC/DC converter supplied.
<b>Sound Level</b>	72 dBA @ 1 meter radius on inlet equatorial plane.
<b>Optional Accessories</b>	Hard shell carrying case; electret sample filter assembly (for stand-alone operation)



SASS 4100 two-stage air sampler flow.



SASS 4100 components.

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



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