

SASS® 4200



High-Flow Aerosol Concentrator

Rugged, powerful collection for mobile or fixed installations

Features

- High sampling rate
- Wide operating temperature
- Minimal maintenance
- Suitable for both moving vehicles and buildings
- Reliable- no moving parts other than the primary fan
- Weather-proof
- Shock resistant
- Clog resistant

Application Areas

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

The SASS® 4200 is a highly efficient aerosol concentration device designed for both vehicular and fixed-location high volume aerosol sampling and monitoring. A powerful blower inside the unit draws air in at a rate of about 4,000 LPM. A patented high-flow virtual impactor transfers incoming air particulates to a lower flow rate secondary loop. This concentrate can then be routed to a location where the aerosols are stored or examined. In addition to providing better large-area surveillance, this allows aerosols to be collected under frigid or very hot ambient conditions and then analyzed in a more suitable temperature-controlled environment.

Connectivity The unit is compatible with a wide variety of portable samplers or bioanalyzers such as Research International's SASS 2300, SASS 3100, or BioHawk LF®. The secondary airflow containing the aerosol concentrate may range from about 1% to 10% of the primary flow. Operation at low secondary flows creates very high aerosol concentrations, while



operation at higher secondary flow rates maximizes the total number of particulates captured.

Vehicle-mount installations The rugged, shock-mounted construction of the SASS 4200 makes it ideal for installation on a vehicle roof for external collection, while ancillary equipment such as low volume samplers and bioanalyzers can be placed in a controlled environment within the vehicle. A vehicle-mounted unit can be rapidly deployed to different locations, providing continuous sampling along a road or border while the vehicle is in motion.

Fixed installations The SASS 4200 is equally well-suited for fixed installations, such as on a building roof or in a subway, where it may function as the intake point of an infrastructure monitoring system.

Advanced secondary flow technology The concentrated aerosol generated by the SASS 4200 is available at a nominal 48.3 mm circular port located

under the unit, while a similar spigot near the rear of the instrument discharges the concentrate air after it has been stripped of particles. 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.

Clog resistant, easy to decontaminate

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 at the unit's front inlet face further restricts the entrance of large debris. Core components within the external shroud are mounted in such a way that they can be easily removed for decontamination or replacement. Dust/rain caps are also provided for both the inlet and outlet faces for use when not sampling.

Water resistant While it is not recommended that the SASS 4200 be operated in the rain, tests have shown that the unit will tolerate the direct injection of up to 8 liters/minute of water into the inlet in the form of 1 to 2 mm nominal diameter water droplets.

U.S. Patent Nos.: 9791353, 10677689



SASS® 4200 SPECIFICATIONS

Primary airflow:	Over 4000 liters/min sampled at the inlet face and discharged at the rear outlet face.
Secondary airflow:	40 – 360 LPM at +0.4 cm of water static head.
Concentration enhancement:	4 –15 times, typical, depending on primary/secondary air flow ratio
Particle size range:	0.5 microns to 10 microns; for delivery to a wet or dry sampler such as the SASS 2300 or SASS 3100, respectively.
Secondary airflow connections:	3.8 cm ID male hose fittings provided for aerosol concentrate output and secondary air exhaust.
Overall size mounted in framework:	481mm (19 in.) wide x 451mm (17.75 in.) high x 865mm (34 in.) long
Weight:	16.3 kg (36 lbs.)
Operating temperature range:	-40 °C to 60 °C
Power requirements:	Unit requires 24VDC @ 7 amps. Fan motor is electronically commutated for long life.
Electrical connection:	Military-style weatherproof connector
Sound levels:	Measured at 1 meter distance Front: 84 dB; side: 81 dB; rear: 87 dB

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



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