SASS® 4200

Vehicle-Mount Aerosol Concentrator

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

SASS 4200 High-Volume Vehicle Mount Aerosol Concentrator

The SASS® 4200 is a highly efficient, high-volume aerosol concentration device designed for vehicular applications. A blower-driven concentration mechanism inside the unit pulls air in at a rate of about 4,000 LPM. Forward vehicle motion is not necessary for proper operation. Particulates in the sampled air are transferred to a low flow-rate secondary loop that can be routed to a location inside the vehicle. The unit is compatible with a wide variety of small portable samplers or bioanalyzers such as the SASS 2300, SASS 3100, or BioHawk. 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.

The primary goal is to provide users with a highly efficient, rugged aerosol particle concentrator/collector that can be mounted onto either a civilian or military vehicle. By mounting only the rugged shock-mounted concentrator on the vehicle's roof, ancillary equipment such as low volume samplers and bioanalyzers can be placed in a controlled environment within the vehicle while the concentrator performs the primary objective of external collection. In addition, a vehicle-mounted unit can also be rapidly deployed to different locations and can provide continuous sampling along a road or border while the vehicle is in motion.

FEATURES

- Roof mount
- Integrated aerosol concentrate inlet and outlet ports
- No moving parts, other than the primary fan
- Military-style electrical connector for power
- Minimal maintenance
- Wide operating temperature
- Clog resistant

APPLICATION AREAS

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

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 unit is available for discharging 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. 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.

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. Core components within the external shroud are mounted in such a way that they can be easily removed for de-contamination or replacement. Dust/rain caps are also provided for both the inlet and outlet faces for use when not sampling.

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SASS 4200 Vehicle-Mount Aerosol Concentrator Specifications	
Primary airflow:	Over 4000 liters/min is 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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