



CBRN Magyarország

SASS® 3100

Dry Filter-Based Air Sampler

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



SASS 3100 Dry Air Sampler

The SASS® 3100 Smart Air Sampler System is a compact, rugged microprocessor-controlled portable air sampler designed for use with state-of-the-art electret filter media. It is highly suited to the collection of biological and radioactive aerosols. In independent tests performed by third parties, it has outperformed all competitors in terms of collection efficiency and suitability.

The standard 44mm diameter electret filter used with the SASS 3100 samples at a maximum rate of 300 liters/minute and has a collection efficiency of 50% at an aerosol particle diameter of 0.5 microns. A second HEPA-style electret filter that is physically interchangeable has 95%+ collection

efficiency for particles greater than 0.3 microns in diameter. It has a maximum sampling rate of 49 liters/minute – a very high rate for a HEPA-style filter of this size. For users interested in collecting radioactive aerosols, the HEPA-style filter meets all key international standards for radioaerosol collection.

Flow rates and sampling protocols are microprocessor controlled and may be pre-programmed for different types of field work using a bundled PC software package. The unit can be operated in local mode wherein the user turns the fan on and off manually or it can also be operated remotely via an RS232 serial link.

For applications where run-to-run cross-contamination is a serious concern, the filter mounting structure may be removed and cleaned as a separate component. The motor/rotor assembly may also be removed and the rotor cleaned.

Field operation may be powered by either a primary or rechargeable battery. The primary battery provides over 20 hours of continuous operation at maximum flow, while the rechargeable battery should power the device for more than 24 hours. A universal wall-plug power supply accepting 100-240 V AC at 50-60 Hz is also provided.

U.S. Patent Nos.: US 9791353, 10677689

For complete technical information, visit resrchintl.com.

FEATURES

- ISO 14698-1 compliant
- Long collection periods
- Usable from -40°C to 70°C
- Adjustable air flow:
50-300 LPM (biological)
10-49 LPM (radiological)
- User-specified automated protocols
- Wireless control option
- Long-life primary and rechargeable battery options
- Easy decontamination, including fan rotor
- Compact and lightweight

APPLICATION AREAS

- Pharmaceutical
- Public health
- Clean rooms
- Military
- Food processing
- UAVs
- Agriculture
- Indoor air quality
- Environmental
- Homeland security

Specifications

Operating Principle	Collection by electret dry filter media.	
Air Collection Rate	Standard (bioaerosol) electret filter:	User adjustable 50 LPM to 300 LPM.
	HEPA-style (radiological) electret filter:	User adjustable 10 LPM to 49 LPM.
Filter Collection Efficiency	Standard (bioaerosol) electret filter:	50% at 0.5 micron diameter.
	HEPA-style (radiological) electret filter:	More than 95% for > 0.3 µm diameter.
Filter Mass and Composition	Standard (bioaerosol) electret filter:	12 mg/cm ² . Polypropylene electret microfiber.
	HEPA-style (radiological) electret filter:	2.2 mg/cm ² for active media; 8.6 mg/cm ² including backing scrim. Polypropylene electret microfiber.
Filter Media Size	4.4 cm active diameter filter, mounted in 6.0 cm diameter injection-molded holder.	
Device Dimensions	15.60cm W x 17.04cm D x 19.81cm H	
Operating Temp. Range	-40° to 70°C	
Storage Temp. Range	-40° to 70°C	
Humidity range	All-weather. Optional rain shield prevents wetting of filter during rainy conditions.	
Decontamination	Water-tight design allows decontamination with 1 to 5% bleach solution. Fan shell and motor/rotor assembly may be removed for decontamination.	
Drive fan	High efficiency centrifugal fan with electronically commutated drive motor. Fan life is 30,000-40,000 operating hours.	
Weight	2.0 kg (3 lb 15 oz); add 1 kg for battery.	
Power Source	BA-5590/U primary battery, UBI-2590 rechargeable battery, or 100–240 VAC/50–60 Hz lump-in-cord 28 VDC power supply.	
Power consumption	< 10 watts	
Operating time with battery	Standby: BA-5590/U Primary battery: > 8 days	UBI-2590 rechargeable battery: > 10 days
	Sampling: BA-5590/U Primary battery: > 20 hrs	UBI-2590 rechargeable battery: > 24 hrs
System Controls	Microprocessor controlled. RS232 or optional wireless link for remote operation or reprogramming. Dimmable LEDs monitor for battery end-of-life and fan rotation.	
Communications	RS232. RF links optional.	
Connectors	Standard: DB-9. Optional: Military CCSI (additional cost).	
Sound Level	45-61 dB (A) at 1 meter; peak value at exhaust port.	
Package	EMI-resistant, water-tight extruded aluminum case.	

Research International reserves the right to change specifications without notice.

		CBRN Magyarország Kft. H-1097 Budapest, Illatos út 11/b. Tel./Fax: +36 1 280-6428 www.cbrnmagyarorszag.hu info@cbrnmagyarorszag.hu
		



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SASS® 3010 Particle Extractor

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



The SASS® 3010 particle extractor

The SASS® 3010 is used to extract and transfer to a small fluid volume, aerosols captured by Research International's electret filters. Captured particulates can be difficult to remove because induced dipole fields create a strong holding force and must be neutralized. Once particulates have been released, they must then be removed from within the fibrous filter matrix and collected in a small amount of sample fluid. These processes are efficiently performed in a matter of 1 to 2 minutes using the SASS 3010 Particle Extractor.

Extraction efficiencies have been found to be in the range of 70 to 80%. To test extraction efficiency several electret filters were used to collect airborne fluorescent polystyrene beads of 1.8 microns diameter. Each filter was operated for a period of 10 minutes.

After the collection phase was completed, the filters were mounted in the SASS 3010 and captured beads transferred to 5 ml of extraction buffer. Extraction efficiencies were then determined using fluorometric assay methods.

It was found that an average recovery of 77% was achieved. A second extraction with an additional 5 ml of extraction fluid resulted in recovery of another 17% of the embedded beads, while two more 5 ml extractions resulted in small 4.5% and 1.5% additions to the total number of beads recovered, respectively.

For complete technical information, visit www.resrchintl.com.

FEATURES

- Fast and efficient extraction from "electret" filters
- Extraction efficiency range 70 – 80%, typ.

APPLICATION AREAS

- Pharmaceutical
- Medical facilities
- Public health
- Clean rooms
- Military
- Food processing
- UAV's (Unmanned Aerial Vehicles)
- Agriculture
- Indoor air quality
- Environmental
- Homeland security



Snap-on electret filter

SASS 3010 Particle Extractor Specifications	
Characteristic	Description
Filter compatibility	For use with SASS 3100 and SASS 4100 filters
Extraction method	Acoustic vibration of the fluid-saturated filter is followed by counter-flow discharge of the suspended aerosol particles.
Extraction efficiency	70-80% typical
Carry-over	1.1% with dry wiping, and 0.01% to 0.1% with a 5 ml flush. Additional flushes will reduce carry-over further.
Extraction time	1 to 2 minutes, typical, with a flush cycle.
Extraction fluid	A pre-filled dropper bottle provides enough buffered extraction fluid to make a 5 ml sample. Other fill levels to 10ml on user request.
Sample fluid storage	The extraction fluid bottle is also used for fluid sample storage upon extraction completion.
Physical size	<ul style="list-style-type: none"> • Body: 10.2 cm (W) x 13.4 cm (D) x 14.5 cm (H) • A 7.8 cm-high plunger protrudes from the extractor's top surface.
Weight	800 grams
Electrical power	Two size "D" primary batteries.
Operating temperature range	0°C to 70°C
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CBRN Magyarország Kft.
 H-1097 Budapest, Illatos út 11/b.
 Tel./Fax: +36 1 280-6428
www.cbrnmagyarorszag.hu
info@cbrnmagyarorszag.hu