



# SASS<sup>®</sup> 3100 Plus

## Dry Air Sampler + Particle Extractor

**Multi-Functional CBRN Solutions**



*SASS 3100 Plus  
Dry Air Sampler plus Particle Extractor*

**The SASS<sup>®</sup> 3100 Plus** is a complete solution for your dry air sampling needs. It combines the high-efficiency of our SASS 3100 Dry Air Sampler with our SASS 3010 Particle Extractor. This combination provides you with the ability to collect airborne particulates, pathogenic bacteria and spores, and then extract and collect the sample into a liquid form for analysis.

The Smart Air Sampler System 3100 (SASS<sup>®</sup> 3100) is a high efficiency dry filter sampler developed for the

collection of airborne particulates, especially pathogenic bacteria and spores. It is digitally smart, remotely controllable, and supports applications requiring a small, rugged low-power device equally comfortable in the arctic or desert. The system is fully portable and accepts both primary and rechargeable batteries.

A key component is the disposable snap on filter element. It is a 44 mm diameter felt-like polymer disc. Each fiber in the disc has an electric field frozen into it which induces a charge in aerosols passing through the filter and provides a capture mechanism much more effective than impaction and up to 50X more efficient than conventional glass or cellulosic filters. Particles with diameters in the range of 0.3 to 0.5  $\mu\text{m}$  are captured with almost 50% efficiency by the disc, while particles of 1.0  $\mu\text{m}$  diameter or larger are captured at 80% or better efficiency. This “electret” media is stable to 70°C, is virtually inert, has a shelf life of 10 years, and a high holding capacity due to a large internal surface-to-volume ratio.

**U.S. Patent Nos.:** 8057608, 8142570

For complete technical information, please visit [www.resrchintl.com](http://www.resrchintl.com).

### **APPLICATION AREAS**

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



*Snap-on electret filter*

SASS 3100 Specifications	
PARAMETER	DESCRIPTION
Operating Principle	Collection by electret dry filter media.
Air Collection Rate	<b>Bioaerosol electret filter:</b> User adjustable 50 LPM to 300 LPM. <b>HEPA-style electret filter (radiological):</b> User adjustable 10 LPM to 49 LPM.
Filter Collection Efficiency	<b>Bioaerosol electret filter:</b> 50% at 0.5 micron diameter. <b>HEPA-style electret filter (radiological):</b> More than 95% for > 0.3 µm diameter.
Filter Media Size	4.4 cm active diameter filter, mounted in 6.0 cm diameter injection-molded holder.
Filter Mass and Composition	<b>Bioaerosol electret filter:</b> 12 mg/cm <sup>2</sup> <b>HEPA-style electret filter (radiological):</b> 2.2 mg/cm <sup>2</sup> for active media; 8.6 mg/cm <sup>2</sup> including backing scrim Both filters are composed of polypropylene electret micro-fiber.
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 (> 24 hrs with primary battery; > 20 hrs with rechargeable battery).
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.
SASS 3010 Particle Extractor Specifications	
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	60-80% 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"> <li>• Body: 10.2 cm (W) x 13.4 cm (D) x 14.5 cm (H)</li> <li>• A 7.8 cm-high plunger protrudes from the extractor's top surface.</li> </ul>
Weight	800 grams
Electrical power	Two size "D" primary batteries.
Operating temp. range	0°C to 70°C
<i>Research International reserves the right to change specifications without prior notice.</i>	

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