

SASS™ 3100

SMART AIR SAMPLER SYSTEM



Feature Highlights

- Usable from -40 to 70C: no fluids
- User-specified automated protocols
- Light Weight, 2.0 kg (add 1 kg with battery)
- Low Power, 8.4 W (>20 hr on battery)
- Wireless or RS-232 communications capability

The Smart Air Sampler System 3100 (SASS® 3100) is a high efficiency dry filter sampler developed for the collection of airborne particulates, especially pathogenic bacteria and spores as well as bio-toxins. It is digitally smart and customer programmable, remotely controllable, and supports applications requiring a small, rugged low-power device. Because it collects dry particles it is not limited to temperatures above 0°C but rather it is equally functional in environments ranging from harsh arctic cold to severe desert heat conditions. SASS 3100 allows user-specified automated sampling protocols that can include collection periods several days in length. The system is fully portable and accepts standardized batteries—both single use and rechargeable types.

SASS 3100 is a COTS product that has been in commercial production for over 2 years with excellent reliability performance,

and it has been a top performer in recent Technology Readiness Evaluations. It can be used in totally standalone operation or in tandem with a TacBio Bio-Aerosol Detector equipped to trigger the SASS 3100 to collect a large volume air sample following an alarm signal from TacBio.

A key component of SASS 3100 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 an electrostatic charge in aerosols passing through the filter and provides a particle capture mechanism much more effective than impaction and up to 50X more efficient than conventional glass or cellulosic filters. Collection efficiency for

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SASS 3100

micron sized particles is 75% or better. 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. Collected particles can be easily extracted into buffer solution using the SASS 3010 Particle Extractor, and this buffer solution can then be tested using Immunoassay and PCR technologies such as NIDS and Bio-Seeq PLUS to confirm the presence of high threat Bio-Agents.

Smiths Detection is a global distributor of SASS 3100, manufactured by Research International (RI). RI is an official licensee of the U.S. government for the TacBio and has the right to manufacture and sell the instrument worldwide. RI is an innovative provider of leading edge Bio-Detection and Bio-Collection technologies.

Technical Data

General Specifications

Size	Filter Media: 4.4 cm (1.73 in) diameter active filter in 6.0 cm (2.4 in) diameter holder SASS 3100 unit: 16 x 17 x 20 cm (6.1 x 6.7 x 7.8 in) with handle 16 x 14.5 x 20 cm (6.1 x 5.7 x 7.8) without handle
Weight	Unit: 2.0 kg (4.4 lbs); add 1 kg (2.2 lbs) for battery
Operating temperature range	-40 to 70°C (-40 to 158°F)
Storage temperature range	-40 to 70°C (-40 to 158°F)
Humidity range	All-weather. Optional rain shield prevents wetting of filter during rainy conditions
Decontamination	Ethylene oxide, vapor phase hydrogen peroxide or 5% sodium hypochlorite solution
Power source	BA-5590 Primary battery, BA-5390 extended life battery or UBI-2590 rechargeable battery. Operable on AC mains power: 82-265 VAC, 47-63Hz
Power consumption	8.4 W (>24 hrs with primary battery, >20 hrs with rechargeable battery)
Connectors	Standard: DB-9. Optional: Military CCSI (additional cost)
System controls	Microprocessor controlled, programmable from PC software application supplied with unit
Sound level	45-61 dB (A) at 1 meter; peak value at exhaust port
Package	EMI resistant, water-tight aluminum extrusion
Mounting	Standard ¼-20 camera thread on unit handle and base
Operating principle	Electret dry filter media with high efficiency centrifugal fan
Air collection rate	User adjustable from 50 Liters/min to 310 Liters/min
Collection efficiency	0.5 micron: 50%, 1.0 micron: 75%, 2.0 micron: 90%
MTBF	Designed with long life bearings with design life in excess of 30,000 hours
Communications	RS-232 or optional RF link for remote operation or reprogramming



Sass electret filter

For product information, sales, or service, please go to www.smithsdetection.com/locations

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