



Using the
SASS-2300
Air Sampler

SASS[®] 2300

Smart Air Sampler System





Using the
SASS-2300
Air Sampler

SETUP IF RUNNING IN STAND-ALONE MODE

Connect AC Power Supply OR Install Battery

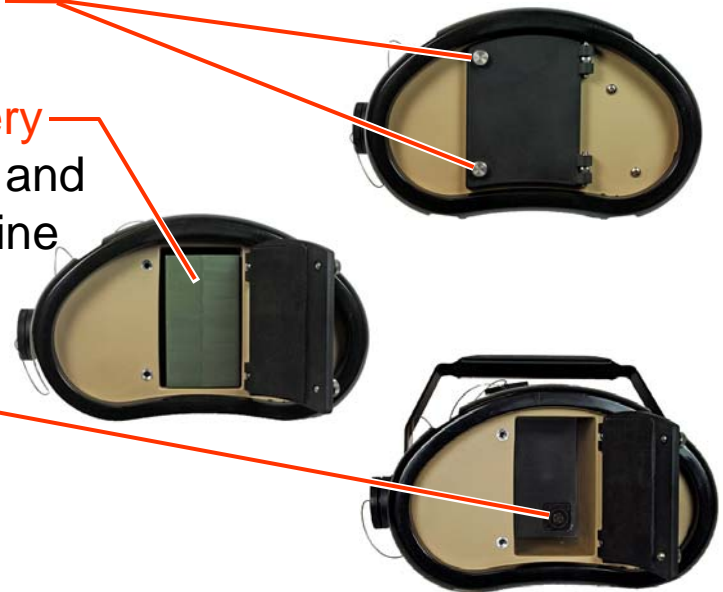
- **AC Operation**

- Connect the **power supply's output plug** to the SASS 2300.
- Connect **power supply and cord** to an AC wall plug.



- **Battery Operation**

- Turn unit upside down. Unscrew the **thumbscrews** holding the door closed.
- Open door and insert **battery** (be sure battery connector and **internal mating connector** line up).
- Close the door and tighten thumbscrews.



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Pre-Start Up Procedure

- Fill the **liquid reservoir** with 1000mL to 1200 ml of distilled water.



- Remove the **air exhaust** and **air inlet** covers



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Switch and LED Locations/Uses



Power
button

Operating
Mode switch



Green LED.
"Power On"

Yellow LED.
"Pump On"

Sample
Control
switch

Turn the SASS On

- Set the **Operating Mode** switch to the middle (*Remote*) position.



- Press the **Power** button.
Green LED will light.

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Collecting A Sample: Processing Air

- To process air, move the **Operating Mode** switch to the **Collect** position.
- To stop processing air, move the **Operating Mode** switch to the middle (**Remote**) position.



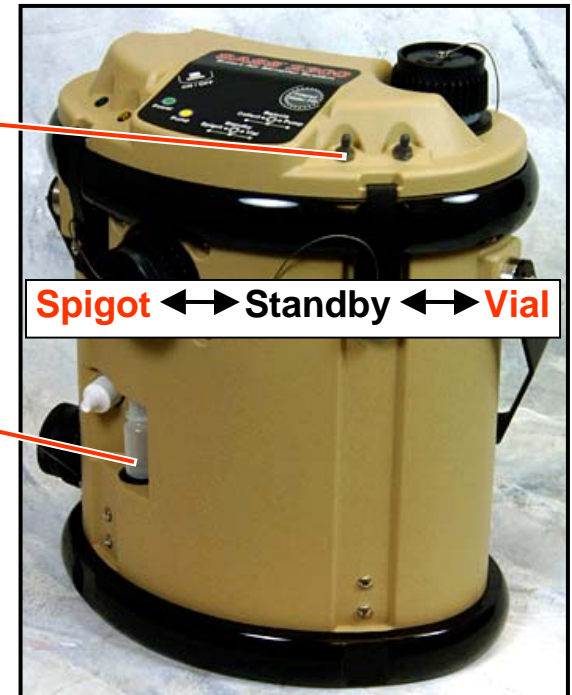
Collect ↔ **Remote** ↔ **Pump**

Extracting the Collected Sample (Part 1)

- To extract a sample, first move the **Sample Control** switch to either **Spigot** or **Vial** position.
 - If **Vial** is chosen, place a vial in the **Filling Station**.
 - If **Spigot** is chosen, connect tubing to the **Sample Output Spigot** and place a suitable container at the end of the tubing.



Leave Sample Control switch in the middle (**Standby**) position when the unit is not being used.



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Extracting the Collected Sample (Part 2)

- Move the **Operating Mode** switch to **Pump**. The yellow LED will light and the sample will be transferred to the selected point.
- When done, move the Operating Mode switch to the middle (**Remote**) position.



Collect ↔ Remote ↔ Pump

Cleaning the SASS: Automatic Process

- Prior to cleaning, prepare containers for the flush water. 1 ml of water will be dispensed into the **Sample Vial** and 20 ml of water will go to the **Sample Spigot**.



- To start the process, rapidly toggle the **Sample Control** switch at least 3 times between any two positions. The cleaning process will be automatically executed.



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SETUP IF RUNNING FROM A COMPUTER

Connect AC Power Supply OR Install Battery

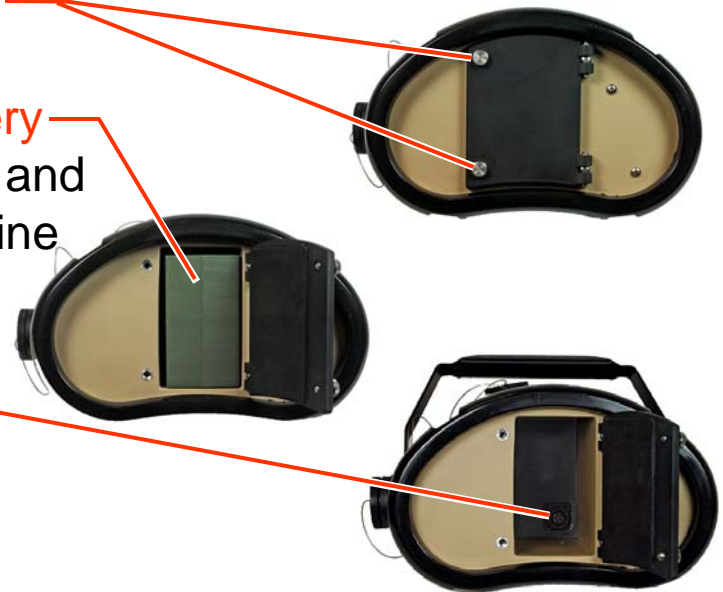
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- **Battery Operation**

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Connect the RS-232 Cable

- Connect the female plug to one of the computer's **RS-232 communications ports** or to a **USB port** via an **RS-232-to-USB adapter**



- Connect the **male plug** to the back of the SASS 2300.



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Pre-Start Up Procedure

- Fill the **liquid reservoir** with 1000mL to 1200 ml of distilled water.



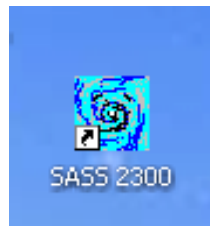
- Remove the **air exhaust** and **air inlet** covers



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Install Software

- Place software CD into computer drive. If software does not self-install, open the software CD folder and double-click on the “setup.exe” file.



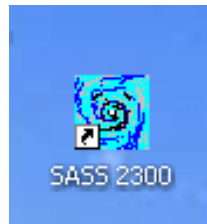
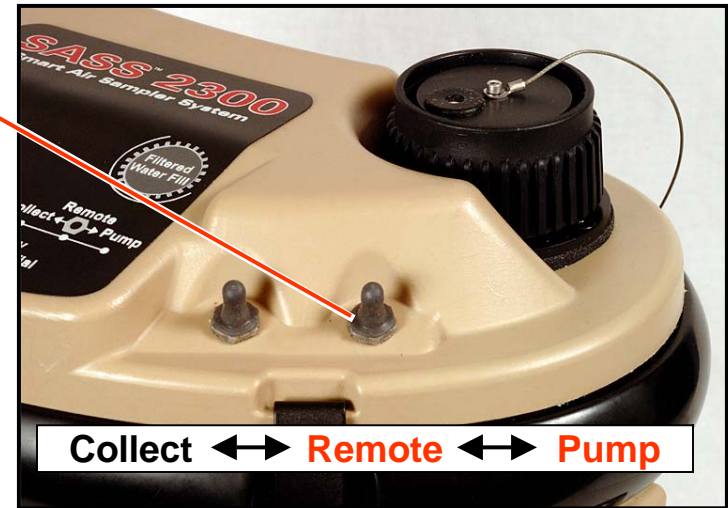
- When finished, a new icon appears on the desktop entitled, SASS 2300.

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Start Up from Software Program

- Set **Operating Mode** switch to middle position (**Remote**).

- Press the **Power** button. The **Green LED** will light up.



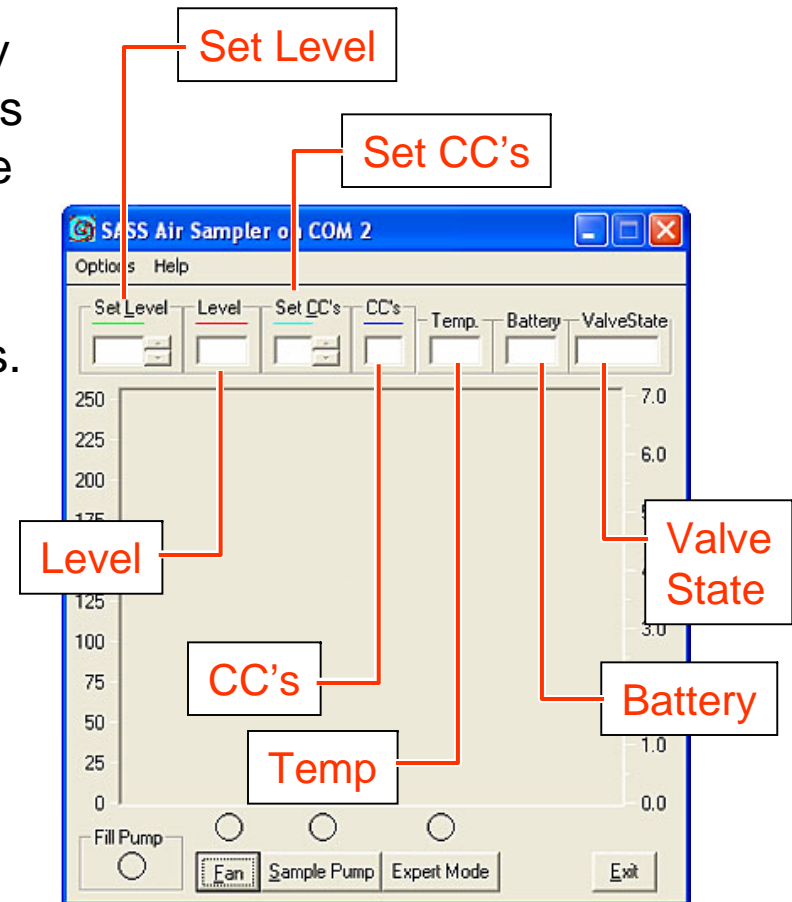
- Double-click on the SASS 2300 Icon to start up the SASS 2300 software (if its not already started).



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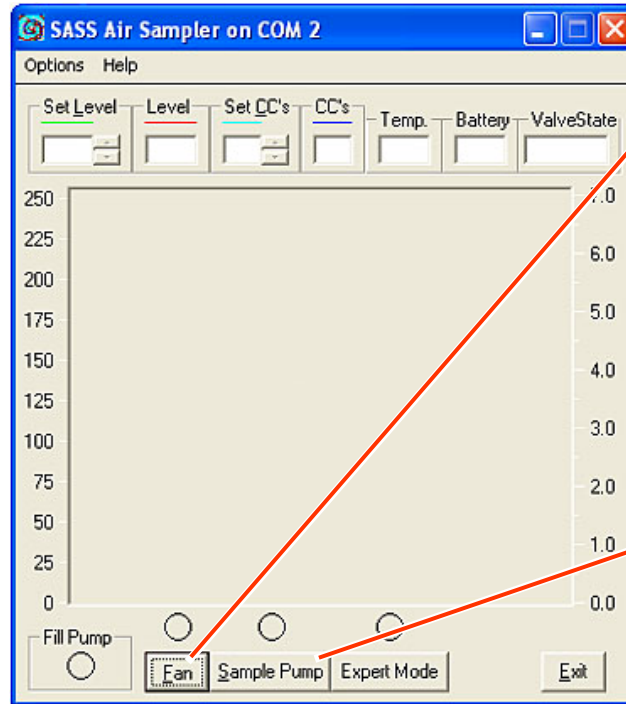
Main Window Status Information

- The Main Window primarily displays operating setpoints and real-time values for the liquid level control.
 - Set Level** field shows liquid level in set points.
 - CC's** field shows current liquid level in cc's.
 - Temp** field shows internal electronics temperature.
 - Battery** field shows battery voltage.
 - ValveState** field indicates the position of the Sample Control Switch.



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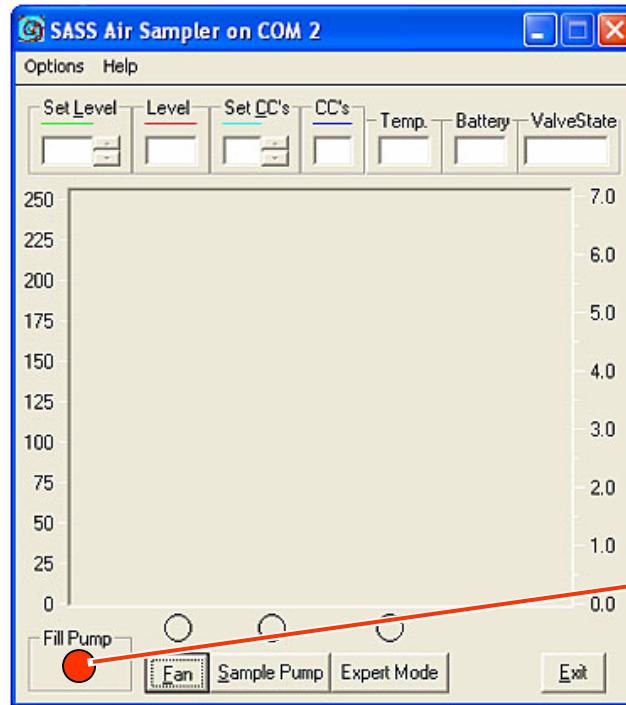
Software Control Buttons



- **Fan** button controls the fan on the cyclone. This button is the equivalent of moving the Operating Mode Switch to the Sample position.
- **Sample Pump** button activates the sample pump and causes a sample to be pumped from the cyclone to the destination selected with the Sample Control Switch.

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Liquid Level Indicator

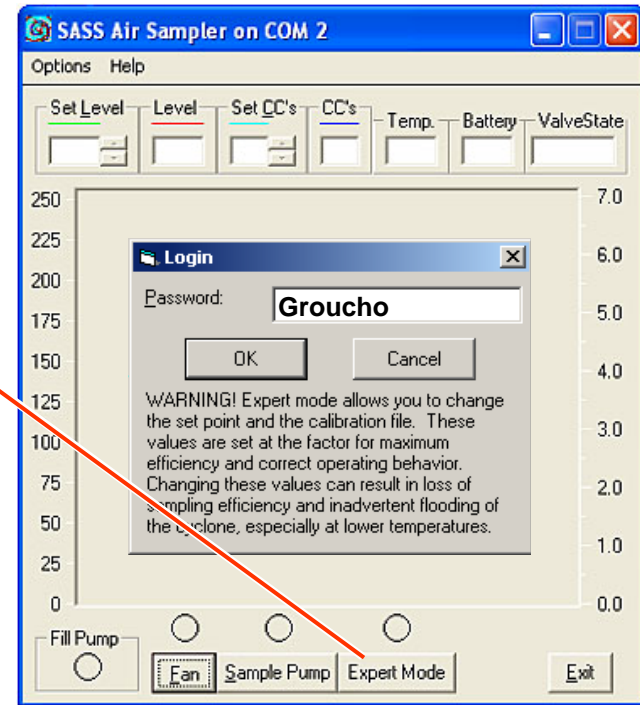


- When the liquid level drops too far, the microprocessor operates the peristaltic pump and replenishes the level inside the cyclone. When the pump is activated, the **Fill Pump** circle in the lower left corner of the window turns red, allowing observation of the duty cycle of the fill operation.



Using Expert Mode

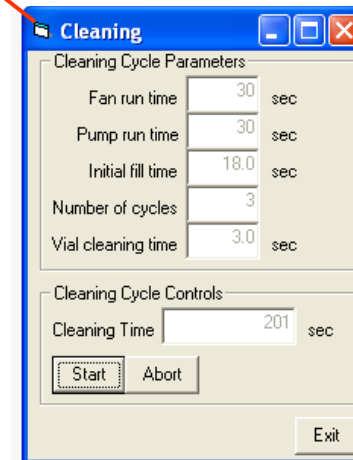
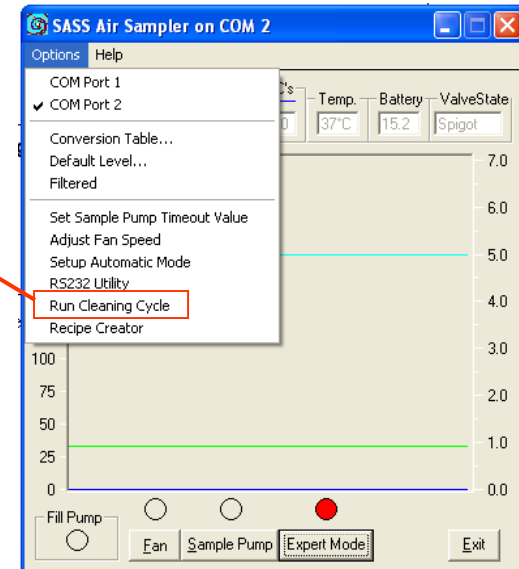
- **Expert Mode** button, allows the user to access a set of commands by entering a password. Click on the **Expert Mode** button. This activates the login window. Type in the password, “Groucho” and click OK to activate (please note that this password is case sensitive).



Additional details can be found in the
SASS 2300 Instruction Manual.

Run Cleaning Cycle

- Click on the option **Run Cleaning Cycle** in the **Options** drop-down menu.
- The **Cleaning Time** box in the window will show the total run time for the cleaning routine.

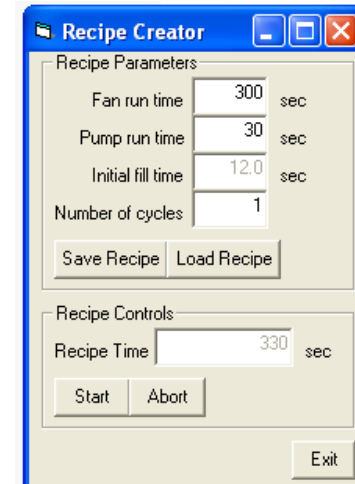
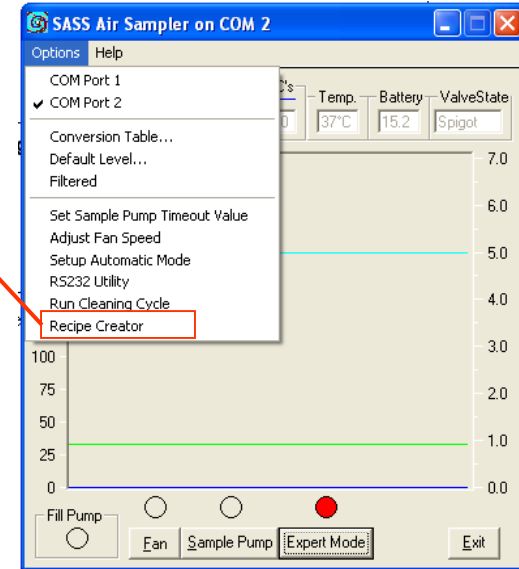


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Recipe Creator

- **Recipe Creator** window allows you to create a recipe that automatically runs the unit from the Windows program.



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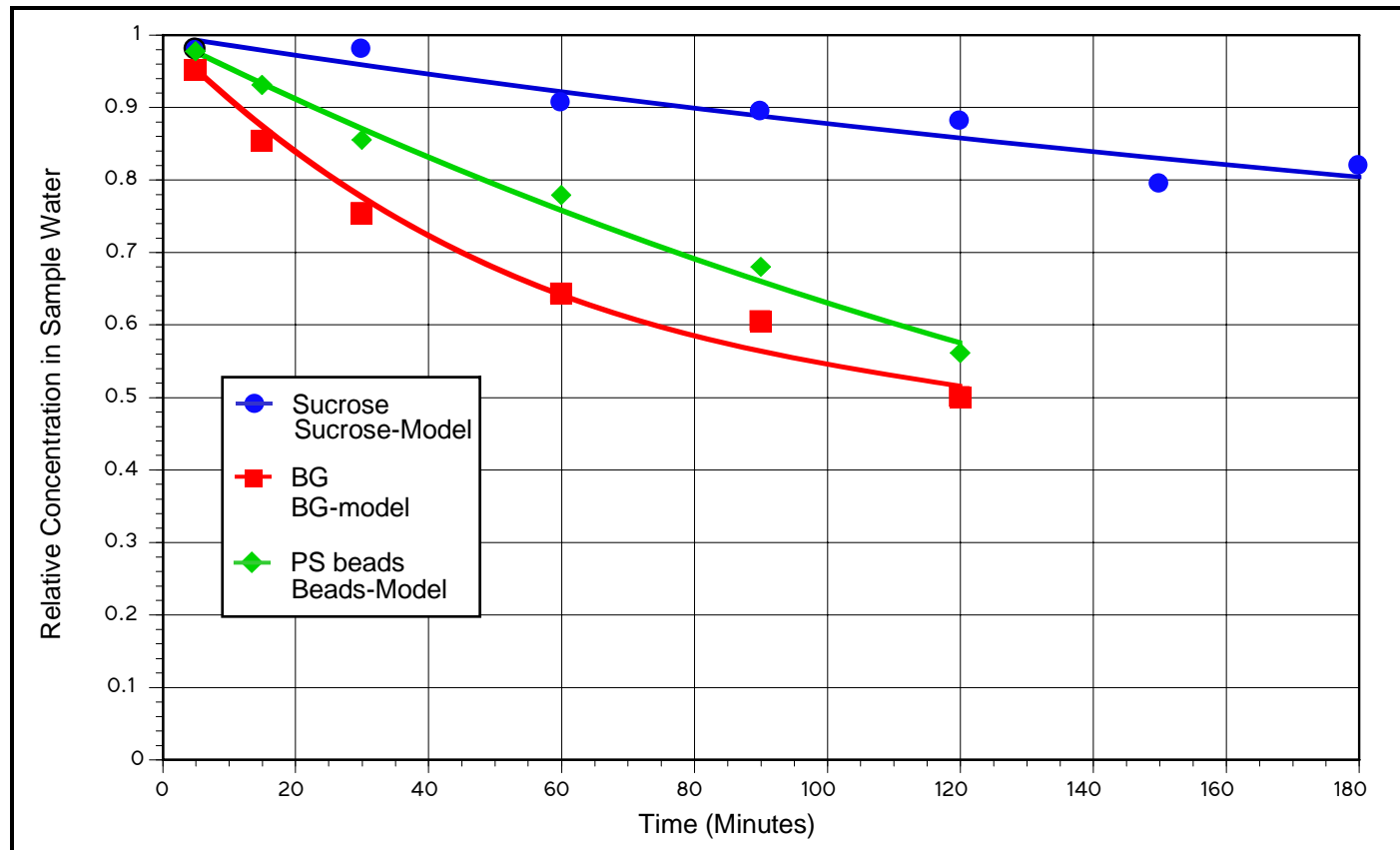
SASS 2300 Specifications



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SPECIFICATIONS	
<u>Characteristic</u>	<u>Description</u>
Operating principle	Multi-stage wetted-wall cyclone with enhanced particulate collection.
Air collection rate	325 LPM using 40,000 hr. life brushless fan.
Particulates collection range	1-10 μm . Contact Research International regarding vapor collection applications.
Concentration ratio	75,000/min., nominal.
Liquid inventory	4-5 cc range, adjustable by user. Proprietary control loop maintains a constant liquid volume in the sampler, independent of collection time, temperature, or humidity; useful for concentrating trace airborne analytes.
Make-up water	1 liter on-board reservoir; supplemental off-board reservoirs may be used in fixed installations: 0.8 cc/min typical evaporation rate at 20C/50% RH.
Physical size	18.4 cm x 21.3 cm x 34.3 cm (7.2" W x 8.4" D x 13.5" H).
Weight	2.8 kg without battery, 3.8 kg with battery (8/10.2 lbs). Add 1 kg (2.2 lbs) for 1 liter of water.
Air inlet	Industry-standard threaded adapter. It is recommended that third-party accessories have an airflow channel 2.54 cm diameter or larger.
Humidity range	Non-condensing conditions.
Operating temperature	Above freezing conditions to 50 $^{\circ}$ C.
Power source	12 VDC BA-5590/U primary battery; or BA-5390/U extended life primary battery; or UBI 2590 rechargeable battery; or 82-265 Volt (47-63 Hz) AC lump-in-cord power supply.
Power consumption	0.92 amps @ 12 V, 11 W.
Sample extraction	On-board 12 cc/min peristaltic pump, manual or remotely controlled. Vial filling module included. Air sampling may continue during extraction.
System controls	Microprocessor controlled. RS-232 or optional wireless link for remote operation or reprogramming. Additional TTL and motor drivers available.
Sound level	60 dB (A).
Package	Lightweight two-piece molded plastic shell with swivel-style carrying handle.
Decontamination	Auto-flush protocol using onboard water, or manual flush with detergent and/or disinfectant. Disposable high-performance pull-through fan module.
Accessories	Carrying case; inlet hose; inlet screen; sample bottles; rechargeable battery and charger.
Approvals	U.S. Dept. of Homeland Security certified under U.S. Safety Act of 2002

SASS Loss: Long-Term Operation



The reduction in analyte concentration within the SASS 2300 fluid sample with continued operation is primarily determined by surface adhesion. Losses via the fan are low. Effective analyte half-life is typically in the range of three hours, but the effective loss rate decreases with time.

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