



MicroVol™ 1100

Low Volume Air Sampler

The Acoem MicroVol 1100* low volume air sampler provides a flexible sampling platform for PM₁₀, PM_{2.5} or TSP particulates and basic meteorological parameters.

It is suitable for both indoor and outdoor applications. The unit is microprocessor controlled and uses a mass flow sensor in conjunction with ambient temperature and pressure sensors to automatically maintain a constant volumetric flow rate.

* Acoem MicroVol 1100 formerly known as Ecotech MicroVol 1100.

Measurements consistent with*

- PM₁₀ AS 3580.9.9 2017
- PM_{2.5} AS 3580.9.10 2017

* Keywood et al. (2000) CSIRO Atmospheric Research, 'Testing a low-cost aerosol sampler', Clean Air and Environmental Quality, Vol 34 No 4, pp. 38-42.

Indoor sampling

- Low power consumption
 - Quiet operation – ideal for indoor air quality studies
 - Volumetric flow control automatically corrected to standard reference temperature
 - Ultra-efficient, long life DC pump delivers flow rates of 1.0 to 4.5 L/min.
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Outdoor sampling

- Wind direction & speed used to activate/deactivate sampler
 - Fence line monitoring available with a network of samplers
 - Built for all conditions – lightweight, rugged weatherproof construction
 - Can operate via battery or solar powered sources (optional).
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Enhanced communication

- RS232 output for data collection & remote communication
 - Filter block & instrument error alarms available
 - Total control of instrument remotely from PC
 - Simple programming of sampling periods, including daily & weekly programs, with in built "1-in-X day" sampling capability.
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Directional sampling

- Wind direction & speed used to activate/deactivate sampler
- External trigger (0 – 5 VDC) can be used for activating sampling program.

Specifications

Operation:	Microprocessor controlled (internal data logging)
Volumetric flow range/accuracy:	1.0 - 4.5 L/m
Flow accuracy:	± 2 % of reading
Flow repeatability:	± 0.5 % of reading
Temperature range accuracy:	0 - 45 °C ± 1 °C
Barometric pressure range:	600 - 900 Torr ± 4 Torr
Filter types:	47 mm ringed circular filter
Inlets available:	PM ₁₀ , TSP (standard), PM _{2.5} (optional)
Sampler dimensions:	300 x 170 x 170 mm
Sampler weight:	3.75 kg
Battery pack dimensions:	185 x 170 x 170 mm
Battery pack weight:	4.4 kg
Battery pack life:	Up to 40 hours sampling from fully charged battery pack
Operating voltage:	12 VDC
Power consumption:	2.5 - 3 watts depending on filter loading
Standard accessories:	TSP/PM ₁₀ size selective inlet Single 47 mm filter holder 100 - 240 AC to 12 VDC power converter MicroVol downloader software RS232 cable

Communication & data logging

Number of readings

- 150 (averaging period is user selectable, e.g. 75 hrs of 30 min averages)

External inputs

- 1 x wind direction sensor input (10 k potentiometer)
- 1 x wind speed sensor input (contact closure)
- 1 x spare contact closure input (e.g. tipping bucket rain gauge)

Output

- RS232C

Options

- Purpose built battery pack, or solar panel & battery pack
- Moisture elimination system
- Optional PM_{2.5} size selective inlet adaptor
- Optional wind speed & direction sensor or tipping bucket rain gauge.

