

MicroVol 1100 Low Volume Particulate Sampler

The MicroVol 1100 Particulate Sampler provides a flexible sampling platform for PM₁₀, PM_{2.5} or TSP particulates and basic meteorological parameters.

The MicroVol 1100 is suitable for both indoor and/or remote/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. Particulates are size selected and collected on a sample filter for gravimetric analysis.

The MicroVol 1100 features internal data logging of temperature, barometric pressure and air volume sampled. Data from optional tipping bucket rain gauge or wind speed/direction sensors can also be collected and stored. Values stored in the sampler can be downloaded to a PC via the RS232 port or simply viewed on the inbuilt LCD.

The MicroVol 1100 is also available as a Weather Station unit which can log humidity, temperature, wind speed, wind direction and pressure. This unit can hold 2 days worth of 15 minute data or continuously send data to a report writing program i.e. WinCollect.



Standards

- PM₁₀: AS/NZS 3580.9.9 2006
- PM_{2.5}: AS/NZS 3580.9.10 2006
- CE and C-tick approval (for Australia/New Zealand)
- Manufactured under ISO9001 and ISO14001 management systems.

Features

- Designed in collaboration with CSIRO - Division of Atmospheric Research.
- Active electronic volumetric flow control maintains a constant flow rate even as particulate loading increases.
- Easy to use menu interface accessed via in-built keypad and LCD.
- Simple user defined programming of sampling periods.
- Internal data logging of sample start and stop times, total air volume sampled and average temperature and pressure. Logging and storage of precipitation, wind speed and direction inputs (Optional).
- RS232 Serial interface enables data to be easily downloaded to a PC.
- Conditional sampling available. Sampler can be programmed to log data only when wind speed and/or direction are within a user-specified ranges.
- Ultra-efficient, long life DC pump delivers flow rates of 1.0 to 4.5 l/min.
- Low power consumption.
- Built for all conditions - light weight, rugged weatherproof construction.
- Both PM₁₀ and TSP inlets are provided as standard.
- Can operate via battery or solar power sources (optional).
- Quiet operation-ideal for indoor air quality studies.

**ECOTECH**WORLD CLASS
environmental
MONITORING

Specifications

Flow:

Volumetric flow range/accuracy:	1.0- 4.5 l/min
Flow accuracy:	± 2% of reading
Flow repeatability:	± 0.5% of reading.
Temperature range/accuracy:	0-45 deg C ± 1 deg.
Barometric pressure range:	600-900 Torr ± 4 Torr.

Filter Holder

Filter types: 47 mm ringed circular filter.

Size Selective Inlets

Inlets available: PM₁₀, TSP (standard), PM_{2.5} (optional).

Data Acquisition

Number of readings:	150 averaging periods for each parameter monitored.
Averaging periods	User selectable.
External inputs:	1x wind direction sensor input (10 Kohm potentiometer). 1x wind speed sensor or tipping bucket rain gauge input (contact closure).
Data collection:	Via RS232 port.

General

Sampler dimensions:	300 mm (height) x 170 mm (diameter).
Sampler weight:	3.75kg.
Battery pack dimensions:	185 mm (height) x 170 mm (diameter).
Battery pack weight:	4.4 kg.
Battery pack life:	48 hours sampling from fully charged battery pack.
Operating voltage:	12 V DC.
Power consumption:	2.5 - 3 watts depending on filter loading.
Standard Accessories:	TSP/PM ₁₀ size selective inlet. Single 47mm filter holder. 100-240V AC to 12V DC power converter. MicroVol Downloader software & RS232 cable.

Options

- Purpose built battery pack, or solar panel and battery pack.
- Optional two stage filter pack:
 - 1st stage collects fine particulate, inorganic anion concentrates or acidic particulates.
 - 2nd stage collects non reactive gases.
- Optional PM_{2.5} size selective inlet adaptor.
- Optional wind speed and direction sensor or tipping bucket rain gauge.



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