

## HiVol 3000

### HIGH VOLUME AIR SAMPLER

**The HiVol 3000 particulate sampler performs remote unattended sampling of PM<sub>2.5</sub>, PM<sub>10</sub> or TSP along with basic meteorological parameters.**

The HiVol 3000 incorporates advanced programming functions and electronic volumetric flow control to maintain a consistent flow and collect a truly representative sample of particulate matter.

Optional attachments allow the sampler to measure wind speed and direction which can then be used to trigger sector selectable sampling (e.g. fence-line monitoring).

#### Approvals

- U.S. EPA Manual Reference Method: RFPS-0706-162 approval for PM<sub>10</sub>
- Meets Australian standard for PM<sub>10</sub> and TSP monitoring.
- Only high volume air sampler with CE and C-tick approval.
- Manufactured under ISO9001 and ISO14001.



#### Reliable sampling

- Volumetric flow control automatically corrected to standard reference temperature.
- Programmable reference temperatures.
- Industrial brushless motor (100 000 hours continuous field operation). Weather-proof marine quality anodised aluminium cabinet.
- Automatic supply voltage monitoring and shut-down facility prevents damage to instrument.

#### Directional sampling

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

#### Enhanced communication

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



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## SPECIFICATIONS

<b>Operation:</b>	Microprocessor controlled (internal data logging)
<b>Pump/Motor:</b>	Side channel blower driven by an induction motor (brushless)
<b>Flow controller:</b>	Variable frequency drive
<b>Volumetric flow range:</b>	Nominal 45-96 m <sup>3</sup> /hr
<b>Vacuum capability:</b>	140 mBar max
<b>Flow accuracy:</b>	Better than +/- 1m <sup>3</sup> /hr
<b>Flow repeatability:</b>	+/- 1% of reading
<b>Construction:</b>	Anodised aluminium and Stainless steel fasteners
<b>Filter size:</b>	250 x 200mm rectangular element
<b>Dimensions:</b>	380mm (W) x 380mm (D) x 1200mm (H) plus inlet
<b>Weight:</b>	45kg plus inlet weight
<b>Operating voltage:</b>	200-240V + 10% 50/60 Hz (optional 115V 60Hz)
<b>Running current:</b>	4A nominal (depending on filter loading & flow rate) Start up current
<b>Temp measur. range:</b>	0-50°C
<b>Barometric pressure:</b>	600-900 mmHg +/- 4mmHg

### Communications/Data logging

<b>No. of readings:</b>	150 (averaging period is user selectable, for example 75 hours of 30min averages)
<b>External inputs:</b>	1 x wind direction sensor input (10k potentiometer) 1 x wind speed sensor input (contact closure) or alternatively 1 x spare contact closure input (eg. Tipping bucket rain gauge)
<b>Output:</b>	RS232C

## OPTIONS

- PM<sub>10</sub>, PM<sub>2.5</sub> or TSP size selective inlets
- Calibration plate and field calibration transport case
- Manometer
- WS/WD sensors
- RH Sensor
- Muffler.

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## HiVol 3000 PUF

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### HIGH VOLUME PUF SAMPLER

**The HiVol 3000 PUF Sampler provides a flexible platform for sampling organic compounds and monitoring basic meteorological parameters.**

The PUF utilises poly-urethane foam (PUF) to collect particulate matter and store it in a sterile environment for later analysis.

The HiVol 3000 PUF unit is a reliable, durable and proven sampler using volumetric flow control to maintain consistent flow and collect a truly representative sample of particulate matter.

Optional attachments allow the sampler to measure wind speed and direction which can then be used to trigger sector selectable sampling (e.g. fence-line monitoring).



The HiVol 3000 PUF incorporates advanced programming functions and electronic volumetric flow control to maintain a consistent flow and collect a truly representative sample.

#### Reliable sampling

- Volumetric flow control automatically corrected to standard reference temperature.
- Industrial brushless motor (100 000 hours continuous field operation).
- Weather-proof marine quality anodised aluminium cabinet.
- Automatic supply voltage monitoring and shut-down facility prevents damage to instrument.

#### Directional sampling

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

#### Enhanced communication

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

<b>Operation:</b>	Microprocessor controlled (internal data logging)
<b>Pump/Motor:</b>	Side channel blower driven by an induction motor (brushless)
<b>Flow controller:</b>	Variable frequency drive
<b>Volumetric flow range:</b>	Nominal 10-20 m <sup>3</sup> /hr
<b>Vacuum capability:</b>	175 mBar max
<b>Flow accuracy:</b>	Better than +/- 0.2 m <sup>3</sup> /hr
<b>Flow repeatability:</b>	+/- 5 % of reading
<b>Construction:</b>	Anodised aluminium and Stainless steel fasteners
<b>Filter size:</b>	100mm diameter filter Replaceable PUF glass cartridge element
<b>Dimensions:</b>	380mm (W) x 380mm (D) x 1200mm (H) plus inlet
<b>Weight:</b>	45kg plus inlet weight
<b>Operating voltage:</b>	200-240V + 10% 50/60 Hz (optional 115V 60Hz)
<b>Running current:</b>	4A nominal (depending on filter loading & flow rate) Start up current
<b>Temp measur. range:</b>	0-50°C
<b>Barometric pressure:</b>	600-900 mmHg +/- 4mmHg

### Communications/Data logging

<b>No. of readings:</b>	150 (averaging period is user selectable, for example 75 hours of 30min averages)
<b>External inputs:</b>	1 x wind direction sensor input (10k potentiometer) 1 x wind speed sensor input (contact closure) or alternatively 1 x spare contact closure input (eg. Tipping bucket rain gauge)
<b>Output:</b>	RS232C

## OPTIONS

- Calibration plate
- Field calibration transport case
- Manometer
- WS/WD sensors
- RH Sensor
- Muffler.

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environmental monitoring solutions

## HiVol 3000 XAD

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### HIGH VOLUME XAD SAMPLER

**The HiVol 3000 XAD Sampler provides a flexible platform for sampling organic compounds and monitoring basic meteorological parameters.**

The XAD sampler collects a wider variety of compounds (than a PUF sampler) on a hydrophobic polyaromatic resin (XAD).

The HiVol 3000 XAD unit is reliable, durable and proven sampler using volumetric flow control to maintain consistent flow and collect a truly representative sample.

Optional attachments allow the sampler to measure wind speed and direction which can then be used as triggers to capture other meteorological parameters.



#### Reliable sampling

- Volumetric flow control automatically corrected to standard reference temperature.
- Industrial brushless motor (100 000 hours continuous field operation).
- Weather-proof marine quality anodised aluminium cabinet.
- Automatic supply voltage monitoring and shut-down facility prevents damage to instrument.

#### Directional sampling

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

#### Enhanced communication

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

<b>Operation:</b>	Microprocessor controlled (internal data logging)
<b>Pump/Motor:</b>	Side channel blower driven by an induction motor (brushless)
<b>Flow controller:</b>	Variable frequency drive
<b>Volumetric flow range:</b>	Nominal 10-20 m <sup>3</sup> /hr
<b>Vacuum capability:</b>	325 mBar max
<b>Flow accuracy:</b>	Better than +/- 0.2 m <sup>3</sup> /hr
<b>Flow repeatability:</b>	+/- 5 % of reading
<b>Construction:</b>	Anodised aluminium and Stainless steel fasteners
<b>Filter size:</b>	100mm diameter filter Replaceable XAD glass cartridge element
<b>Dimensions:</b>	380mm (W) x 380mm (D) x 1200mm (H) plus inlet
<b>Weight:</b>	45kg plus inlet weight
<b>Operating voltage:</b>	200-240V + 10% 50/60 Hz (optional 115V 60Hz)
<b>Running current:</b>	4A nominal (depending on filter loading & flow rate) Start up current
<b>Temp measur. range:</b>	0-50°C
<b>Barometric pressure:</b>	600-900 mmHg +/- 4mmHg

### Communications/Data logging

<b>No. of readings:</b>	150 (averaging period is user selectable, for example 75 hours of 30min averages)
<b>External inputs:</b>	1 x wind direction sensor input (10k potentiometer) 1 x wind speed sensor input (contact closure) 1 x spare contact closure input (eg. Tipping bucket rain gauge)
<b>Output:</b>	RS232C

## OPTIONS

- Calibration plate
- Field calibration transport case
- Manometer
- WS/WD sensors
- RH Sensor
- Muffler.

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## HiVol 3000 MegaVol

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### HIGH VOLUME SAMPLER

**The MegaVol 3000 particulate sampler performs remote unattended sampling of particulates and is ideal for heavy metal and radiation exposure monitoring.**

The MegaVol is capable of a very high flow rate (120-150m<sup>3</sup>/hr) the increased flow rate allows representative particulate samples to be collected in shorter time periods (more samples collected per week) or to collect a larger quantity in the same time period (especially for trace levels) than a standard TSP sampler.

The MegaVol is therefore ideally suited for sampling particulates that make up a small percentage of the total sample (heavy metals, radioactive particulates etc.) and provides laboratories with sufficient material to perform quantitative and qualitative analysis.



Optional attachments allow the sampler to measure wind speed and direction which can then be used to trigger sector selectable sampling (e.g. fence-line monitoring).

The sampler software can also double as a remotely accessible data logger for simple weather monitoring (wind speed and direction, temperature, humidity and rainfall).

#### Reliable sampling

- Volumetric flow control automatically corrected to standard reference temperature.
- Industrial brushless motor (100 000 hours continuous field operation).
- Weather-proof marine quality anodised aluminium cabinet.
- Automatic supply voltage monitoring and shut-down facility prevents damage to instrument.

#### Directional sampling

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

#### Enhanced communication

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

<b>Operation:</b>	Microprocessor controlled (internal data logging)
<b>Pump/Motor:</b>	Side channel blower driven by an induction motor (brushless)
<b>Flow controller:</b>	Variable frequency drive
<b>Volumetric flow range:</b>	Nominal 120-150 m <sup>3</sup> /hr
<b>Vacuum capability:</b>	130 mBar max
<b>Flow accuracy:</b>	Better than +/- 2 m <sup>3</sup> /hr
<b>Flow repeatability:</b>	+/- 1 % of reading
<b>Construction:</b>	Anodised aluminium and Stainless steel fasteners
<b>Dimensions:</b>	456mm (W) x 456mm (D) x 1480mm (H) including TSP inlet
<b>Weight:</b>	65kg plus inlet weight
<b>Operating voltage:</b>	200-240V + 10% 50/60 Hz (optional 115V 60Hz)
<b>Power usage:</b>	3500VA nominal (depending on filter loading & flow rate)
<b>Running current:</b>	4A nominal (depending on filter loading & flow rate)
<b>Temp measur. range:</b>	0-50°C
<b>Barometric pressure:</b>	600-900 mmHg +/- 4mmHg

### Communications/Data logging

<b>No. of readings:</b>	150 (averaging period is user selectable, for example 75 hours of 30min averages)
<b>External inputs:</b>	1 x wind direction sensor input (10k potentiometer) 1 x wind speed sensor input (contact closure) or alternatively 1 x spare contact closure input (eg. Tipping bucket rain gauge)
<b>Output:</b>	RS232C

## OPTIONS

- Calibration plate
- Field calibration transport case
- Manometer
- WS/WD sensors
- RH Sensor
- Muffler.

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## MicroVol 1100

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### LOW VOLUME AIR SAMPLER

The MicroVol 1100 low volume air sampler provides a flexible sampling platform for PM<sub>10</sub>, PM<sub>2.5</sub> or TSP particulates and basic meteorological parameters.

The MicroVol 1100 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.

#### Approvals

- PM10 AS/NZS 3580.9.9 2006.
- PM2.5 AS/NZS 3580.9.10 2006.
- Manufactured under ISO9001 and ISO 14001.



#### 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.

#### Outdoor sampling

- Wind direction and speed used to activate/de-activate sampler.
- Fence line monitoring available with a network of samplers.
- Built for all conditions - light weight, rugged weatherproof construction.
- Can operate via battery or solar power sources (optional).

#### Enhanced communication

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

#### Directional sampling

- Wind direction and speed used to activate/de-activate sampler.
  - External trigger (0-5VDC) can be used for activating sampling program.
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## SPECIFICATIONS

Operation:	Microprocessor controlled (internal data logging)
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 types:	47 mm ringed circular filter
Inlets available:	PM <sub>10</sub> , TSP (standard), PM <sub>2.5</sub> (optional)
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 <sub>10</sub> size selective inlet Single 47mm filter holder 100-240V AC to 12V DC power converter MicroVol Downloader software & RS232 cable

### Communications/Data logging

No. of readings:	150 (averaging period is user selectable, for example 75 hours of 30min averages)
External inputs:	1 x wind direction sensor input (10k potentiometer) 1 x wind speed sensor input (contact closure) or alternatively 1 x spare contact closure input (eg. Tipping bucket rain gauge)
Output:	RS232C

## OPTIONS

- Purpose built battery pack, or solar panel and battery pack.
- Moisture elimination system.
- Optional PM<sub>2.5</sub> size selective inlet adaptor.
- Optional wind speed and direction sensor or tipping bucket rain gauge.

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