

APM-3550D

PM2.5 SAMPLER



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

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►► Features

- Air Inlet and PM10 Impactor as per designs standardized by USEPA.
- WINS Impactor as per USEPA design to separate out the PM2.5 sample.
- Microprocessor based Mass Flow Controller maintains constant air sampling rate of 16.7LPM.
- Datalogger continuously displays and records Air Temperature, Filter Temperature, Barometric Pressure, Flow Rate and Air Sample Volume.
- In-built system to control start and stop times of sampler.
- All system parameters recorded at 5 min interval in internal 4GB non volatile Memory.
- Data transfer to USB Memory Stick for ease in recovery of data from remote field locations.
- Brushless, Oil-free, pump practically requires no maintenance.
- Auto Shut off of Sampler if flow rate falls below 1m³/hr. due to filter choking.

The need for a PM2.5 Sampler: At many urban locations in India with high vehicular density impact of high Fine Particle concentration on visibility and respiratory tract diseases has been observed, particularly in the winter months. It is now understood that the characteristics, sources and potential health effects of Fine Particles (smaller than 2.5 microns in diameter) are very different from those of coarse particles. PM2.5 has been included in the revised ambient air quality standards notified in November 2009 implying that both PM10 and PM2.5 needs to be monitored regularly.

APM 3550D PM2.5 Sampler: The APM 3550D PM2.5 Sampler is an impactor based system designed to collect the Fine Particles (PM2.5) on a PTFE filter after removing the coarse dust through a set of two impactors made as per designs published by USEPA.

The omni-directional air inlet and design of PM10 and PM2.5 impactors used in the APM 3550D is as per USEPA design and as such the particle size cut-off of the system complies with international norms. The APM 3550D fully meets all the requirements for PM2.5 samplers spelt out in the guidelines issued by Central Pollution Control Board (CPCB).

►► Features

- Constant sampling rate of 1m³/hr maintained by Mass Flow based digital controller that is unaffected by change in pressure drop due to dust deposit on the filter.



- All run time parameters such as Flow rate, Air Temperature, Filter Temperature, Barometric Pressure, Filter Pressure, Sample Volume etc. recorded in 4GB internal memory.
- Large 40 Ch. X 4 line back lit LCD provides all system parameters at a glance.
- Summary of run time parameters provided at end of sample duration reducing the need to download recorded data.
- FILTER ID recorded to enable weekly / fortnightly download of data.
- Recorded files compatible with MS Excel and can be easily opened in a PC without need for additional software.
- Auto Shut-off of sampler if pressure drop exceeds safe limit so that filter integrity is maintained.

Automatic Compensation for Pressure and Air Temperature: An ambient air temperature sensor and barometric pressure sensor have been provided to automatically provide temperature and pressure correction while reporting flow rate in volumetric flow units. As the system uses a Mass Flow Sensor flow rate readings are unaffected by changes in pressure drop across the filter due to dust loading. An additional filter pressure sensor is also provided to continuously monitor and record the filter pressure and the system terminates the sample collection if the pressure drop across the filter exceeds a safe limit.

Data with FILTER ID recorded in SD card. The APM 3550D has a 4GB in-built SD card Flash memory based data logger that records Filter ID, air temperature, filter temperature, barometric pressure, filter pressure, flow rate, Coefficient of Variation (CV) and also totalizes and records the volume of air sampled. Data transfer to a USB drive is provided for easy operation in the field. Recorded files can be directly opened in MS Excel without need for additional software.

As all run time parameters required for working out the concentration of PM_{2.5} are displayed on the LCD screen of the APM 3550D via a summary information command the recorded data is used only as an AUDIT facility and need not be downloaded after each run.

The brushless, continuous rated induction motor driven suction pump of the APM 3550D is almost noise-less and is immune to voltage fluctuations. The instrument has been housed in a sturdy powder coated Aluminum cabinet. The pump unit of the APM 3550D is housed in a separate cabinet to minimize heat dissipation near the filter holder assembly. The two cabinets are clamped together during operation and can be separated for ease of transportation.

►► Specifications

- **Flow Rate** : 1 m³/hr maintained by microprocessor based Mass Flow controller.
- **Elapsed time indicator** : Real Time clock based, records the operating time for each sample in hours and minutes.
- **Volumetric Flow rate Compensation** : Performed automatically by the system using Sensors for Ambient Temperature and Barometric Pressure.
- **Volume Totalizer** : MCU unit totalizes and displays volume of air sampled.
- **Flow Recorder** : SD card-flash memory based system records flow rate, volume of air sampled, air & filter temperature, filter pressure and barometric pressure.
- **Size selective inlets** : PM10 and PM2.5 Impactor based on USEPA design.
- **Barometric Pressure** : BP sensor with range of 550 – 800 mmHg provided.
- **Ambient & Filter Temp** : System records Ambient Temp. & Filter temperature.
- **Auto shut-off** of sampler if flow rate drops by more than 10% from designed value of 16.7 LPM.
- **Filter Pressure Protection** The system will also shut-off if the pressure across the filter exceeds a safe limit thereby protecting the sample.
- **Vacuum Pump** : Oil Free, pump driven by induction motor for stable flow rate.
- **MS Excel Compatible Files** : Recorded files directly open in MS Excel without need for additional software.
- **Standard Accessory** : Leak Check & Flow rate Calibration adaptor provided.
- **Operating Temp.** : +5 to 45 Deg. C.

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Counter



Optical Emission
Spectrophotometer



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Hematology
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