

FDS - 3113

FINE DUST SAMPLER



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

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

►► SPECIAL FEATURES :

- Microprocessor based controller maintain constant air sampling rate of 16.7 LPM(1m³/Hr.) even in high during filter chocking in high dusting area
- Programmable timer to auto start and stop sampling
- Data can be exported to PC in Excel format using pen drive
- Auto Leak check
- Compact , Portable, Easy to Operate & Handle
- Arrangement for Parallel Gaseous Sampling
- Large alpha numerical LCD display
- Dual data recording, internal and in easy removable memory stick
- Filter Holder is design to accept any standard 47 mm diameter filter.
- Microcontroller based data logger display and record Air & Filter temperature, Filter & Barometric Pressure, Flow rate, Air volume sampled, Elapsed time
- Auto shut off facility if flow rate falls below 1m³/hr, due to excess filter chocking, Temperature variation, Pressure etc..
- Filter holders fitting in the sampler are done such so that these are remain suspended in air & thus not affected by heat of motor fitted in lower cabinet of the sampler, filter temperature records are available
- Suitable for Outdoor Use, Corrosion free lockable housing for wins impactor and filter holder
- Design to runs continue 24 hours or more at constant flow rate of 1m³/hr
- Display values of all parameters are upgraded every 30 seconds
- User friendly design having low operating cost, Pump assembly is brushless and noiseless
- PM 2.5 impactor is developed as per USEPA published standard design,
- Meets the requirement of Pollution Control Board for Fine Dust Sampling
- Sample can be used for Accurate Particulate Sample Collection of PM_{2.5} / PM₁₀ dust monitoring gravimetrically

As per notification of Govt. of India that PM 2.5 dust is mandatory to measure along with other parameters. Fine Dust Sampler FDS 3113 is an advanced sampler which is design and develops as per USEPA standards published design and meets the basic requirement of PCB's for fine dust sampling. FDS 3113 uses a set of impactors design standardize and published by USEPA in Federal register 40 CFR part 50 appendix L (updated May 2002) to separate coarse particulate from the air stream. The particles with aerodynamic diameter larger than 10 microns are tpped by using the opposed jet impaction and those having a diameter between 2.5 and 10 Microns are trapped using the WINS impactor.

The air stream leaving from WINS Impactor consists of only fine particulate with an aerodynamic diameter smaller than 2.5 microns. These fine particles are collected on a special PTFE membrane filter of 47 mm diameter. By removing the PM 2.5 impactor from the sampling device the sampler may be optionally used as PM 10 sampler also. FDS 3113 is having a provision for gaseous attachment using with inorganic gaseous pollutant like SO₂, NO₂, HCl, NH₂ etc.. can be sampled. Gaseous attachment has silica gel trap which maintain constant flow through the sampling.

Ambient air enters at a constant sampling rate 1m³ per hour by a suitable critical orifice through an omni-directional inlet designed to provide a clean aerodynamic cut point for particles greater than 10 microns. Particles in the air stream finer than 10 micron proceed to a second impactor that has an aerodynamic cut point at 2.5 micron. The air samples and fine particles exist from the PM 2.5 impactor is passed through a 47 mm diameter PTFE filter which retain the fine particulate matter. The system has inbuilt diaphragm gas meter to provide a direct measurement of the total sampled air volume in m³.

FDS 3113 is fitted with high capacity, brushless, oilfree, maintenance free, long life noiseless piston pump where sampling rates 1m³/hr is maintained constant with the help of mass flow sensor, suction pump is equipped with heavy duty induction motor. This advantage ensures that sampling rate is unaffected during filter choking and input voltage fluctuation. Impactors are accurately fabricated using CNC machine as per USEPA design. The PM 2.5 filter holder is designed in such a way that it remain close to ambient temperature and there is no chances of loosing volatile fraction of the find dust. Modular design of sampler, tubing and other fitment made this sampler simple and most suitable for fine dust sampling.

►► **STANDARD ACCESSORIES :**

The Standard instrument is supplied with PM10 sampling inlet, wins impactor, orifice, assembly for flow measurement, proportioning valve, Filter Holder to accommodate 47mm dia filter, Sampling Inlet, Wins Impactor, Datalogger, SD card, Pendrive, Leak Check Adaptor, Power Cord, Portable Calibration unit, toolkit for primary servicing and tuning First Aid & Safety Kit, etc.

►► TECHNICAL SPECIFICATION :

PM 2.5 Size	Two stage Impactor confirm to USEPA design, sample collected in a separate 46.2 mm diameter PTFE
Separator	: membrane filter fitted at the bottom of WINS IMPACTOR
PM 10 Size	Single stage impactor matching to European Design (According to EN 12341), sample collected on
Separator	: standard glass micro fiber filter paper of 47mm diameter.
Filter Media	: 47 mm diameter Filter in a Filter Cassette housed in each stream of filter holder assembly.
Flow Rate	: Constant 1m³/hour unaffected by voltage fluctuation and filter chocking through mass flow controller
Power	: Single phase AC 220 volts, 50 Hz, sampler unaffected by +/- 10 % fluctuation in supply voltage.
Data Logger (Electronic Module &	Microcontroller based data logger display and record Air & Filter temperature, Filter & Barometric Pressure, Flow rate, Air volume sampled, Elapsed time Time Totalizer : RTC based record the operating time for each sample in hours and minute Volumetric Flow Rate compensation : Performed automatically by logger using sensor for Ambient Temperature, Barometric Pressure and filter pressures Flow Totalizer : Automatically volume totalized using sample flow & running time in minute controller) Parameter Recording :Dual Internal & External memory based system record all the parameters Auto Operation : Auto shutoff if flow rate drops by more than 10 % from set value of 1m ³ /hr Software : Data can be save in CSV or Excel format which can easy access in any operating system
Weight	Approximate 25 Kg, Operation : Up-to 28 hours continuously
Portable Calibrated Unit : Dry Gas Meter calibrated the sample volume and flow rate with a accuracy of 200 ML	

HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

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Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



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Liquid Partical
Counter



Optical Emission
Spectrophotometer



DSC/TGA



Semi Auto Bio
Chemistry Analyzer



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Hematology
Analyzer



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Reader/Washer



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Urine Analyzer



Total Organic
Carbon 3800



Fully Automated
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