

Technical Specification for Portable Wide Range Aerosol Spectrometer

The wide range aerosol spectrometer should work on combination of electrical mobility spectrometer with Faraday Cup Electrometer and Light scattering at single particles (Optical) to measure PM10, PM2.5, PM1 number concentration and size distribution simultaneously. The instrument should provide information directly to read Inhalable, Thoracic, Respirable particle as per standard. The instrument should read particle size from 10 nm – 35 µm or better with minimum size channel 40. The PM mass measurement range should be 0-1000000 µg/m³. The volumetric flow rate of the instrument should be 1.2 liters /min with less than 5% variation. The instrument should support data storage with minimum interval of 1 min with bluetooth or USB interface and transfer of data. The instrument should run on power supply 230 V ± 10%, 50 Hz with a rechargeable battery pack of 8 hours. The instrument should be portable, its weight should not be more than 8.5 kgs.

Members of Purchase Committee:

Specification for Portable Wide Range Aerosol Spectrometer

Parameter	Specifications
Detection principle	Aerosol Spectrometry : Combination of Electrical mobility spectrometer with Faraday Cup Electrometer and Light scattering at single particles (Optical)
Measured parameters	Simultaneous measurement of: PM10, PM2.5, PM1 Number concentration and size distribution Inhalable, Thoracic, Respirable according to EN481
Particle size range	10 nm – 35 µm or better
Size channels	40 or more
Dust mass	0 – 100,000 µg/m ³ or more
Number concentration	3,000 – 500,000 p/cm ³ (electrical) 0 – 3,000,000 p/L (optical)
Data storage	Storage interval minimum 1 min
Volume flow	1.2 L/min ± 3%
Rinsing air	0.4 L/min to protect laser optics and reference air for self-test
Interface	Bluetooth, USB, RS-232
Software	For operation and data downloading
Power supply	230 V ± 10%, 50 Hz
Battery operation	Built-in rechargeable battery for 8 hours operation
Weight	Not more than 8 Kg for portability
Warranty	3 Years
Installation/Demonstration	Should be done at IITM

Vendor Eligibility Criteria

The bidder should have supplied one similar item to any research Institution in India / IITs. The copy of work order and installation certificate should be submitted as a proof of supply.