



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

Powai, Mumbai 400076.

Reference (PR No.10000016687 and RFx No. 6100000718)

Equipment: Particle Size Analyzer

Technical Specifications:

1. Measurement technique: Laser diffraction and Mie theory based measurement.
2. Particle/droplet size range: “0.1 μ m to 2000 μ m” or wider, accomplished using one or more lens assemblies.
3. Should be able to measure sizes of moving droplets of liquids or solid particulate matter dispersed in air or any gaseous medium.
4. Should be able to measure particle size for liquids and solids of varying refractive index.
5. Lens: Single or multiple lenses should be able to capture the complete droplet size range with complete assembly parts.
6. Concentration range: Should be able to measure particle size even when the transmission is as low as 5%.
7. Light source: Visible laser.
8. Average laser power: greater than or equal to 4mW.
9. Should be able to safely accommodate sprays with diameters of 750 mm. (The distance between the source and receiver should accommodate these sprays.)
10. Suitable receiver and transmitter mounting system.
11. Data Acquisition rate: Greater than or equal to 10kHz
12. Accuracy: +/- 1% or better.
13. Precision: +/- 1% or better
14. Measurement triggering: Both internal and external.
15. Operating temperature: 15-40°C or higher.
16. Humidity: 40-80% RH.
17. Operation voltage: 100-240 VAC, 50 Hz.
18. Latest upgraded Licensed Software should be installed on required computer specifications on Windows 10 operating platform and supply along with complete system with complete accessories.



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Other Requirements:

1. Automatic optical alignment.
2. Spray orientation can be Vertical or Horizontal.
3. Installation, commissioning and training should be provided.
4. Warranty: At least 1 year. Warranty should apply after the satisfactory installation and commissioning.
5. Service support record: The supplier should have installed and maintained similar systems in India since last five years. Please provide customer references.
6. Provide the technical specification compliance table with values.
7. Provide the wavelength of the LASER light source.

General Description:

1. System should provide automated, in situ, real-time droplet size analysis of high concentration aerosols and sprays from a robust, easy-to-use platform.
2. Should be adequately sensitive to changes in the droplet size distribution.
3. Should produce size distribution data rapidly and present it in a format that is easy to understand as per the standard practices (probability density function).
4. Should provide an instant understanding of the evolution of the spray over time.
5. Should have capability to do various statistical analysis within the software.

Signature

Prof. Sudarshan Kumar