

PDPA SPECIFICATION

Technical specification for simultaneous particle size and velocity measurement system

A PDPA capable of time resolved measurement of distributions of droplet/particle size and one component of velocity, simultaneously and non-intrusively at a point in particle laden two phase flow is requested. The following minimum specifications are to be satisfied. If appropriate accessories are required to achieve this specification(s), include them in the tendered quotation.

1. Should operate on the principle of light scattering interferometry.
2. Must be capable of operating in back-scatter mode for velocity measurement and in forward scatter for particle size measurement.
3. Velocity component without directional ambiguity in the measurement range shall be -100m/s to +300 m/s.
4. Accuracy on velocity measure shall be maximum of 1% of the actual reading.
5. Receiver operation mode: Fiber/Non-fiber based
6. Must be capable of measuring particle velocity near zero velocity through frequency shifting.
7. Working distance from the Transceiver and receiver shall be between 200mm to 500mm.
8. Type of the laser: solid state.
9. Minimum laser power: 500mW.
10. Should be able to measure droplet in the size range 0.5 to 200 microns.
11. Data rate should be 100KHz or higher
12. Required rails and mounts for the system shall be supplied.
13. Software capable of outputting the raw data: time of arrival the particle, velocity component and the size of the droplet.
14. Accuracy on size measure shall be maximum of 1% of the actual reading
15. Must furnish testimonials.
16. Laser safety kit shall be provided.