



TEST METHOD FOR POLY-DISPERSE GLASS BEAD STANDARDS ON PARTICA LA-950

Polydisperse glass bead standards were developed as a better test of complete system performance for laser diffraction analyzers, compared to mono-disperse polystyrene latex dispersions that are not representative of the vast majority of materials tested on these instruments. Whitehouse Scientific sells a range of sizes. The method used to test can have significant effect on results.

Analytical test method

Applicable instruments: LA-950 with aqueous pump or solvent-resistant pump

Dispersant fluid: deionized water

Set the following conditions:

- Sample Information tab
 - Sample Information:
 - Sample Name: (nominal size of standard and tolerance)
 - Material: Glass beads
 - Source: (name of vendor)
 - Lot Number:
- Calculation tab
 - Refractive Index
 - File name: STD- GLASSBEADS
 - Fixed value
 - Form of Distribution: Manual
 - Iteration Number: 15
 - Graph
 - Distribution base: Volume
 - Density distribution graph: Standard
- Measurement tab
 - Data acquisition times (Sample)
 - LD: 5000
 - LED: 5000
 - Data acquisition times (Blank)
 - LD: 5000
 - LED: 5000
 - Alignment before measurement: Yes
- System tab
 - Sample preparation
 - Circulation speed: 3
 - Agitation speed: 2
 - Agitation setting: Continuous
 - Ultrasonic power: 7
 - Ultrasonic time: 5 minutes

Procedure:

1. Fill circulation system with deionized water.



Analytical Test Method

Particle Size Distribution Analyzer

Partica LA-950

ATM104

Glass bead standards

2. De-bubble.
3. Start circulation and agitation.
4. Wait 10 seconds.
5. Alignment.
6. Blank
7. Add sufficient sample to achieve proper concentration: 70-95%
8. Activate ultrasonics
9. Measure
10. Save data (or use AutoSave function)
11. Repeat measurement three times on each standard to verify reproducibility.
12. Rinse twice with deionized water between samples.

Results

Verify that the median (D50) is within 3% of the nominal value and the D10 and D90 are within 5% of the nominal values for the standard.

Code	Nominal range	Nominal D10 (microns)	Nominal D50 (microns)	Nominal D90 (microns)
PS192	1-10	2.9	4.2	6.2
PS212	10-100	25.4	41.3	62.9
PS222	50-350	94	151	239
PS232	150-650	244	362	527

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