



## TEST METHOD FOR PS-240 POLY-DISPERSE GLASS BEAD STANDARDS ON PARTICA LA-950

Poly-disperse 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. The PS-240 glass bead standard has been tested and incorporated as a performance specification for the Partica LA-950 analyzer.

### Analytical test method

Applicable instruments: LA-950 AquaFlow, SolvoFlow

Dispersant fluid: De-ionized water

Sonication: Yes

*Set the following conditions:*

- Basic Measurement Conditions
  - Sample Information:
    - Sample Name: PS-240
    - Material: Glass beads
    - Source: Whitehouse Scientific
    - Lot Number: XX-XXXX
    - Refractive Index : STD-GLASSBEADS (1.51-0.0i)
    - Form of Distribution: Manual
    - Iteration Number: 15
    - Distribution base: Volume
- Advanced Measurement Conditions
  - Measurement tab
    - Data acquisition times (Sample) : 50,000
    - Data acquisition times (Blank) : 5000
    - Alignment before measurement: Yes
  - System : Preparation tab
    - Circulation Speed : 15
    - Agitation Speed : 10



# Analytical Test Method

Particle Size Distribution Analyzer

Partica LA-950

ATM109

PS-240 Glass bead standard

## Procedure:

1. Fill circulation system with de-ionized water.
2. Start Circulation and Agitation.
3. De-bubble.
4. Wait 10 seconds.
5. Align the laser and verify that the cell is clean by visually inspecting the Channel baseline.
6. Take the system Blank.
7. Transfer all of the glass beads in the bottle to the sample cup.
  - Note: static interaction between the glass beads and bottle may necessitate rinsing the bottle remnants into the sample cup with water and/or the use of surfactant
8. Record the Measurement.
9. Save data (or use AutoSave function).
10. Collect three measurements on separate samplings for each standard to verify reproducibility.

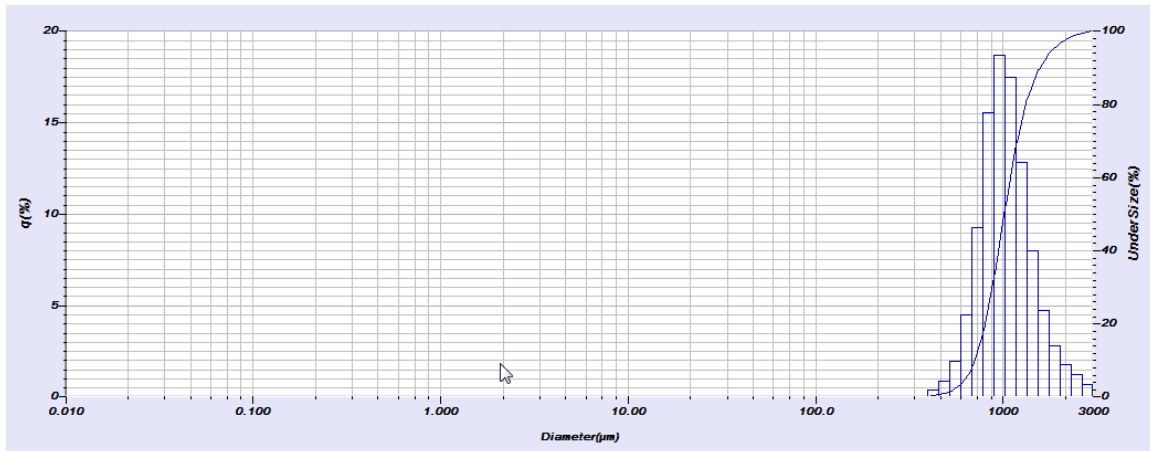
## Results

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.

D10: 651 to 732  $\mu\text{m}$

D50: 970 to 1053  $\mu\text{m}$

D90: 1417 to 1655  $\mu\text{m}$



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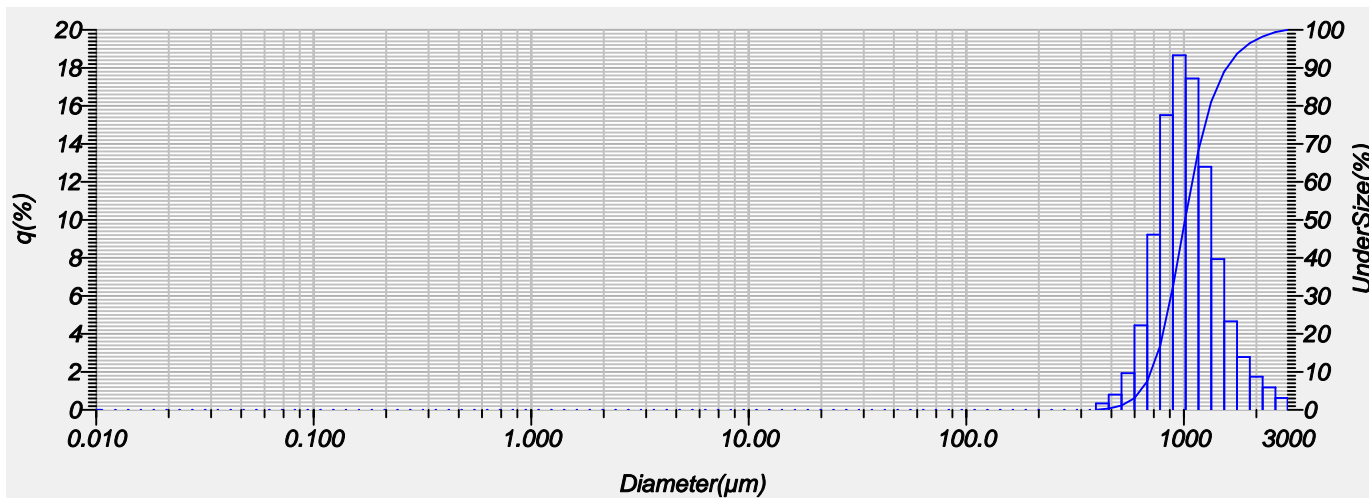
# HORIBA LA-950 Laser Scattering Particle Size Distribution Analyzer

Horiba LA950 for Windows [Wet] Ver7.20

ID# : 201309061003759	Transmittance(R) : 78.9(%)	<b>Median Size : 1012.92017(μm)</b>	<b>SI</b>
Sample Name : PS-240	Transmittance(B) : 81.7(%)	<b>Mean Size : 1093.38660(μm)</b>	
Material : Whitehouse Std	Circulation Speed : 15	<b>Mode Size : 959.3034(μm)</b>	
Lot Number : Batch-01 Bottle-00008	Agitation Speed : 7	Iteration Number : 15	
Data Name : PS240-6		Distribution Base : Volume	

Refractive Index (R) : STD-GLASSBEADS[STD-GLASSBEADS( 1.510 - 0.000i),Water( 1.333

Diameter on Cumulative % : (1)10.00 (%) - 703.9246(μm)  
 : (2)50.00 (%) - 1012.9202(μm)  
 : (3)90.00 (%) - 1575.0903(μm)



No.	Diameter(μm)	q(%)	UnderSize(%)	No.	Diameter(μm)	q(%)	UnderSize(%)	No.	Diameter(μm)	q(%)	UnderSize(%)	No.	Diameter(μm)	q(%)	UnderSize(%)	No.
1	0.011	0.000	0.000	23	0.226	0.000	0.000	45	4.472	0.000	0.000	67	88.583	0.000	0.000	88
2	0.013	0.000	0.000	24	0.259	0.000	0.000	46	5.122	0.000	0.000	68	101.460	0.000	0.000	90
3	0.015	0.000	0.000	25	0.296	0.000	0.000	47	5.867	0.000	0.000	69	116.210	0.000	0.000	91
4	0.017	0.000	0.000	26	0.339	0.000	0.000	48	6.720	0.000	0.000	70	133.103	0.000	0.000	92
5	0.020	0.000	0.000	27	0.389	0.000	0.000	49	7.697	0.000	0.000	71	152.453	0.000	0.000	93
6	0.022	0.000	0.000	28	0.445	0.000	0.000	50	8.816	0.000	0.000	72	174.616	0.000	0.000	
7	0.026	0.000	0.000	29	0.510	0.000	0.000	51	10.097	0.000	0.000	73	200.000	0.000	0.000	
8	0.029	0.000	0.000	30	0.584	0.000	0.000	52	11.565	0.000	0.000	74	229.075	0.000	0.000	
9	0.034	0.000	0.000	31	0.669	0.000	0.000	53	13.246	0.000	0.000	75	262.376	0.000	0.000	
10	0.039	0.000	0.000	32	0.766	0.000	0.000	54	15.172	0.000	0.000	76	300.518	0.000	0.000	
11	0.044	0.000	0.000	33	0.877	0.000	0.000	55	17.377	0.000	0.000	77	344.206	0.000	0.000	
12	0.051	0.000	0.000	34	1.005	0.000	0.000	56	19.904	0.000	0.000	78	394.244	0.000	0.000	
13	0.058	0.000	0.000	35	1.151	0.000	0.000	57	22.797	0.000	0.000	79	451.556	0.335	0.335	
14	0.067	0.000	0.000	36	1.318	0.000	0.000	58	26.111	0.000	0.000	80	517.200	0.794	1.129	
15	0.076	0.000	0.000	37	1.510	0.000	0.000	59	29.907	0.000	0.000	81	592.387	1.926	3.055	
16	0.087	0.000	0.000	38	1.729	0.000	0.000	60	34.255	0.000	0.000	82	678.504	4.446	7.502	
17	0.100	0.000	0.000	39	1.981	0.000	0.000	61	39.234	0.000	0.000	83	777.141	9.220	16.722	
18	0.115	0.000	0.000	40	2.269	0.000	0.000	62	44.938	0.000	0.000	84	890.116	15.511	32.233	
19	0.131	0.000	0.000	41	2.599	0.000	0.000	63	51.471	0.000	0.000	85	1019.515	18.659	50.892	
20	0.150	0.000	0.000	42	2.976	0.000	0.000	64	58.953	0.000	0.000	86	1167.725	17.433	68.325	
21	0.172	0.000	0.000	43	3.409	0.000	0.000	65	67.523	0.000	0.000	87	1337.481	12.790	81.115	
22	0.197	0.000	0.000	44	3.905	0.000	0.000	66	77.339	0.000	0.000	88	1531.914	7.932	89.047	