

**MEASUREMENT OF 1-10 µm POLYSTYRENE LATEX
ON LA-960 AND LA-350**

Four mono-dispersed polystyrene latex (PSL) standards with certified mean diameters 3.0 µm, 4.00 µm, 5.10 µm and 10.00 µm were tested with both the LA-960 high performance laser diffraction system and the LA-350 compact, routine laser diffraction analyzer. Both instruments, offering different optical systems, provide consistent results within the specifications, demonstrating both systems' ability to accurately resolve small differences in sizes and its excellent correlation.

	LA-960	LA-350
Measurement Method	Mie Scattering Theory	Mie Scattering Theory
Measurement Range	0.01 µm to 5000 µm	0.1 µm to 1000 µm
Optical System	Light Sources: 650 nm Laser Diode approx. 5.0 mW 405 nm Light Emitting Diode (LED) approx. 3.0 mW Detectors: Silicon Photo Diode	Light source: 650 nm Laser Diode approx. 5.0 mW Detectors: Silicon Photo Diode

Analytical Test Method

RI (particle): SINGLE-PSL
Form of Distribution: Manual, 1000
Dispersant fluid: Deionized water

Example Data

Nominal	Bottle Tolerance	LA-960	LA-350
Mean Size, µm	µm	Mean Size, µm	Mean Size, µm
3.00	±0.19	3.04	2.95
4.00	±0.54	4.03	4.32
5.10	±0.27	5.22	4.89
10.03	±0.18	9.81	9.85

Material sources: Magsphere Inc., Thermo Fisher Scientific

Discussion

The data shows excellent accuracy and resolution between closely spaced standards. Results above excludes the inherent system to system error of $\pm 0.6\%$ for the LA-960 and $\pm 1.4\%$ for the LA-350. The following graphs provide the individual results.

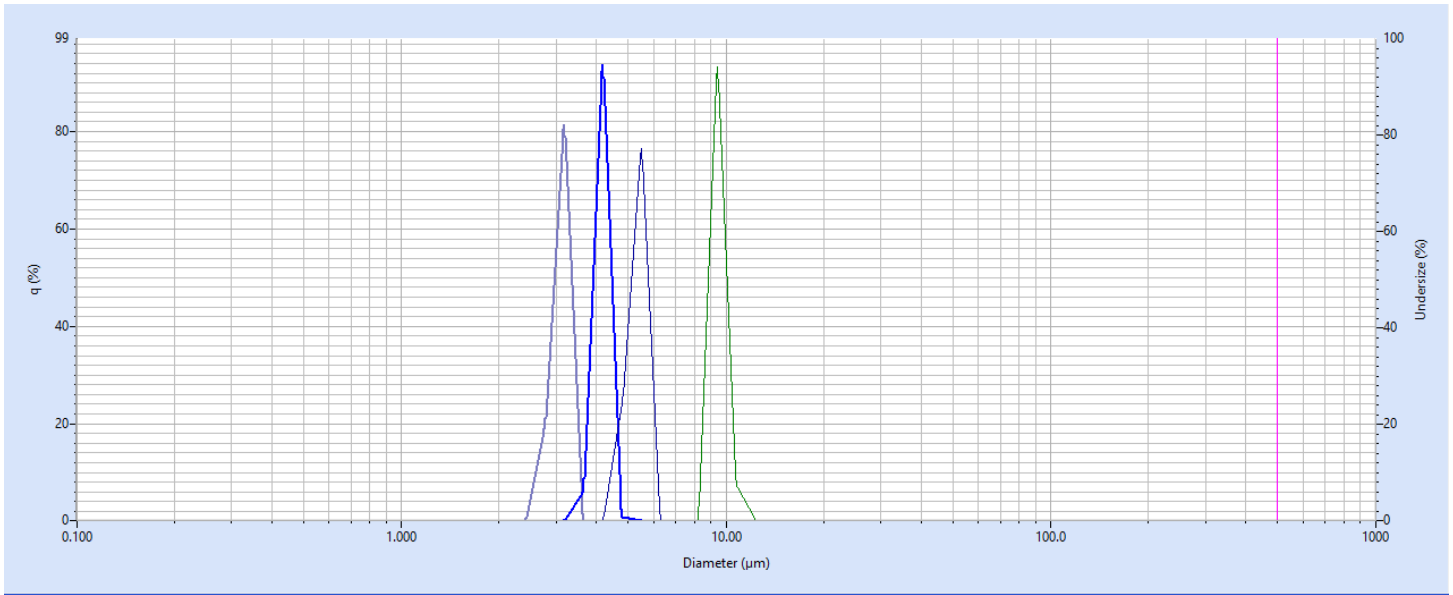


Figure 1. LA-960 data, overlay of 3.00 μm , 4.00 μm , 5.10 μm and 10.03 μm PSL results.

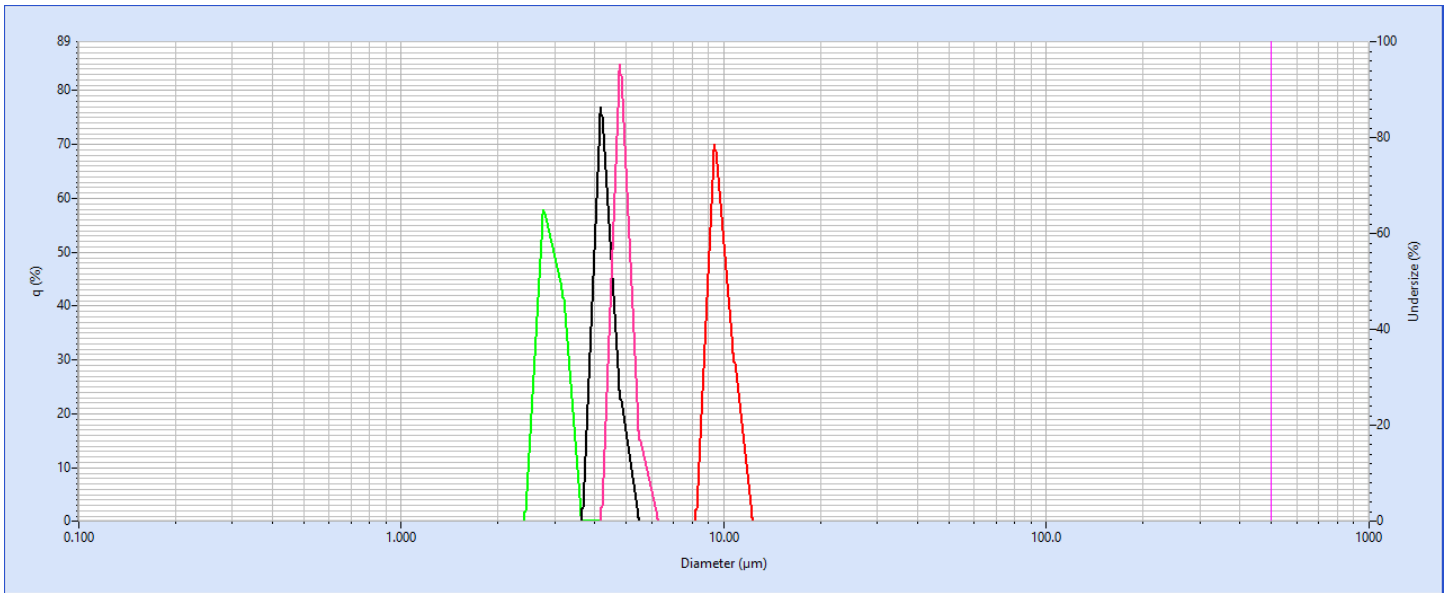


Figure 2. LA-350 data, overlay of 3.00 μm , 4.00 μm , 5.10 μm and 10.03 μm PSL results.