



## MEASUREMENT OF 1-10 $\mu$ m POLYSTYRENE LATEX ON LA-960 AND LA-350

### Summary

Measurement of narrow distribution samples has traditionally been difficult for laser diffraction particle size analyzers in the size range of 2-7 microns. The low scattered light intensity in this range reduces the signal-to-noise ratio, making accurate results difficult to achieve.

Four mono-dispersed polystyrene latex (PSL) standards were recently tested in this size range with excellent results. Nominal median diameters are 3.0 $\mu$ m, 4.95 $\mu$ m, 5.18 $\mu$ m and 10.36 $\mu$ m. Both the LA-960 and LA-350 provide consistent results within the specification of the instrument, demonstrating that samples in this difficult size range can be properly measured with these more advanced analyzers.

In addition, the ability to accurately determine the small difference in size between 4.95 $\mu$ m and 5.18 $\mu$ m shows the impressive resolution capabilities of these analyzers.

### Analytical Test Method

RI (particle): SINGLE-PSL

Form of Distribution: Manual, 1000

Dispersant fluid: Deionized water

Circulation speed: 3

Agitation speed: 1, continuous

### Example Data

Nominal Median, $\mu$ m	LA-950 Median, $\mu$ m	LA-300 Median, $\mu$ m
3.00	3.15	2.84
4.95	4.79	4.79
5.18	5.32	5.63
10.36	9.82	10.53

Material source: Magsphere

### Discussion

The data shows the excellent accuracy capabilities of newer light scattering instruments, as well as the ability to resolve the difference between the two closely spaced standards. The following data provides the individual results.



# Applications Data Sheet

## PSL 1-10 $\mu$ m

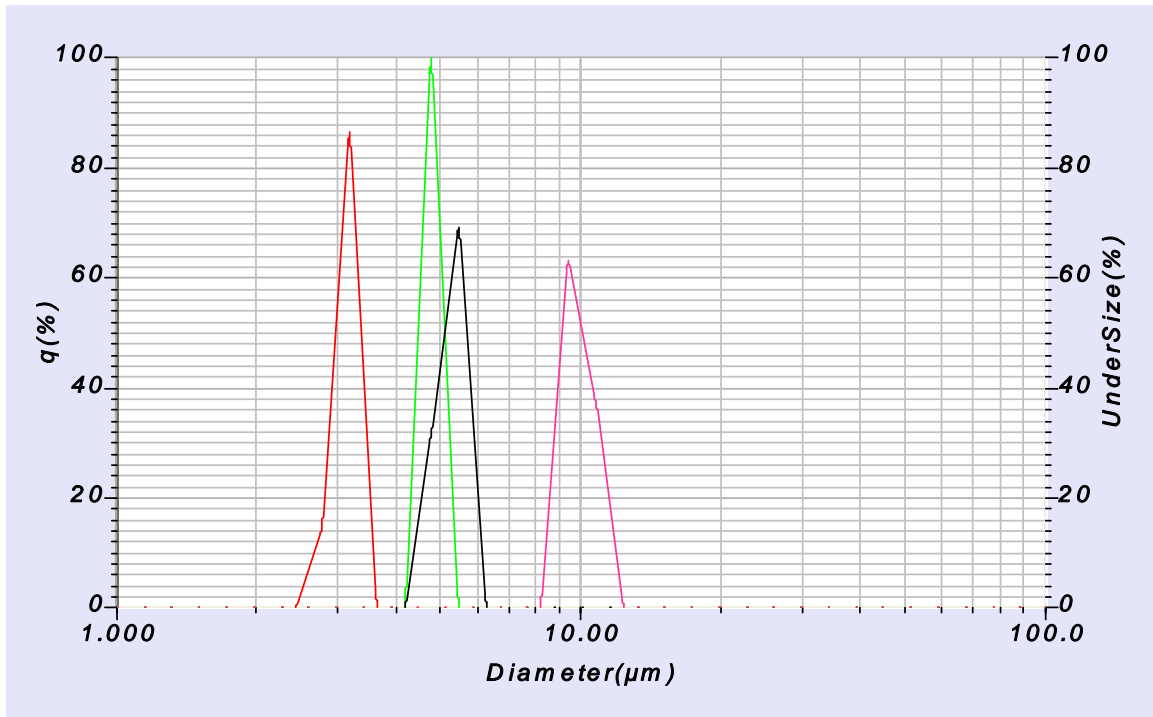


Figure 1. LA-960 data, overlay of 3.0 $\mu$ m, 4.95 $\mu$ m, 5.18 $\mu$ m and 10.36 $\mu$ m PSL results.

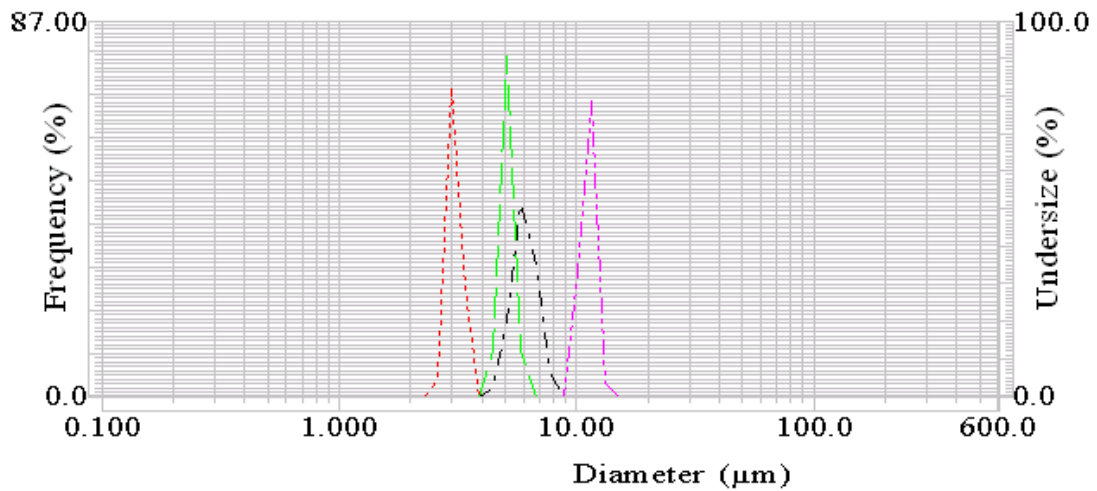


Figure 2. LA-350 data, overlay of 3.0 $\mu$ m, 4.95 $\mu$ m, 5.18 $\mu$ m and 10.36 $\mu$ m PSL results.