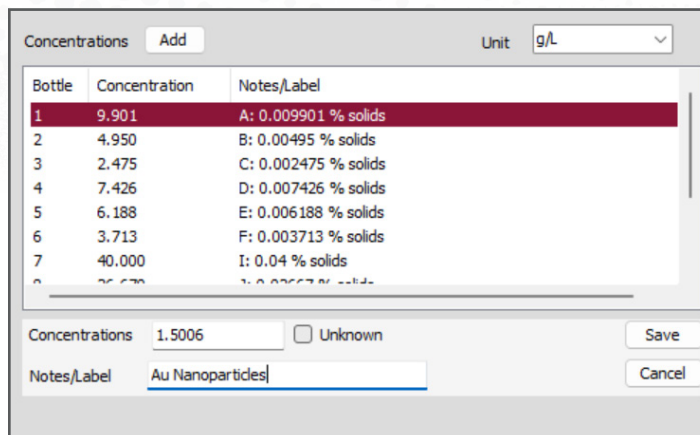


Dynamic Light Scattering Concentration Tool (DLSC)

This measurement type utilizes the intensity of scattered light as represented by DLS countrates to estimate the concentration of particles in suspension by way of comparison with a standard or series of standards. By correlating the unattenuated countrate* (UCR) with known particle size and optical properties, an approximate concentration can be derived. **DLSC** is best suited for dilute systems where multiple scattering is minimal and particle size is uniform or well-characterized. This technique provides a rapid, non-destructive estimate of particle concentration.



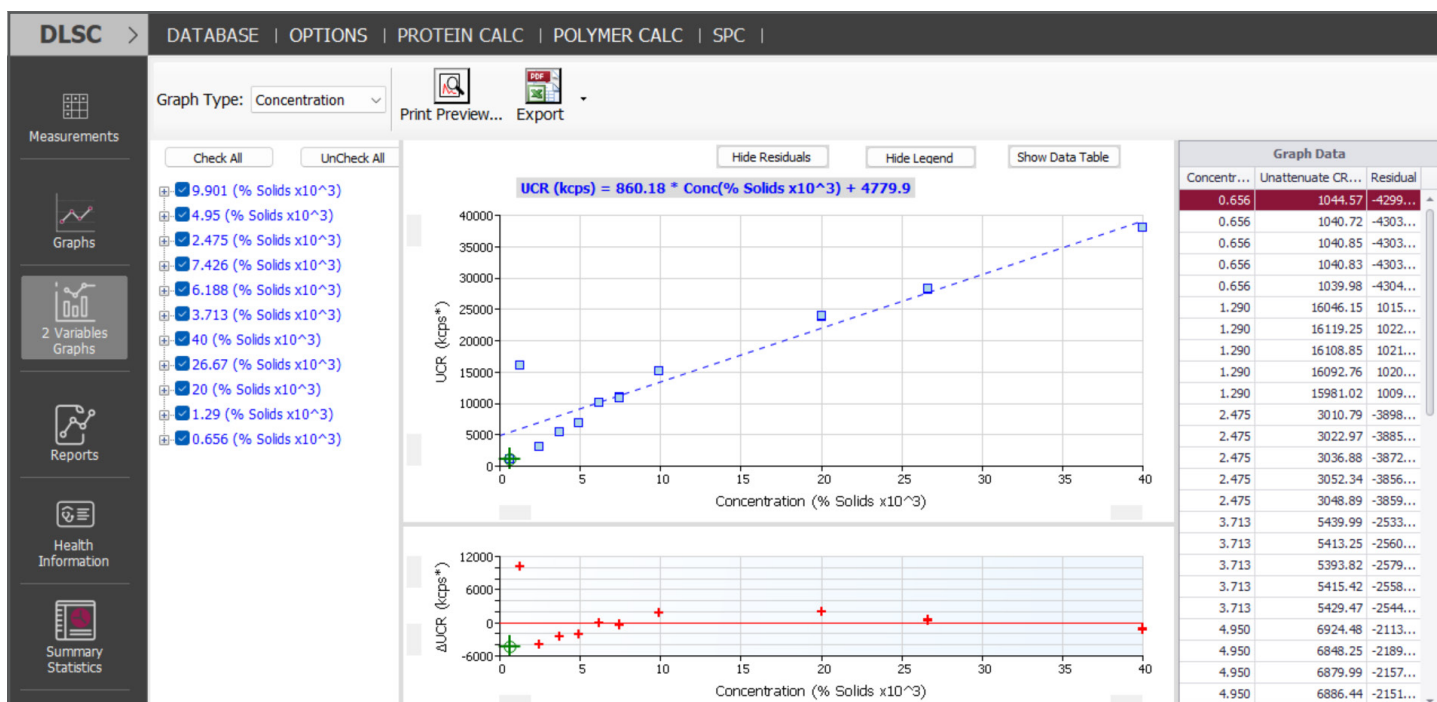
Concentrations Add Unit g/L

Bottle	Concentration	Notes/Label
1	9.901	A: 0.009901 % solids
2	4.950	B: 0.00495 % solids
3	2.475	C: 0.002475 % solids
4	7.426	D: 0.007426 % solids
5	6.188	E: 0.006188 % solids
6	3.713	F: 0.003713 % solids
7	40.000	I: 0.04 % solids

Concentrations 1.5006 ☐ Unknown Save

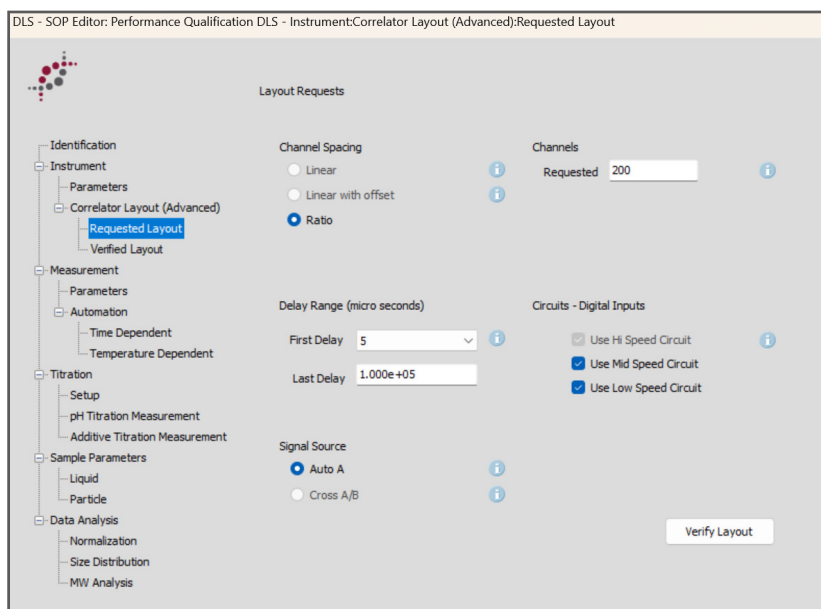
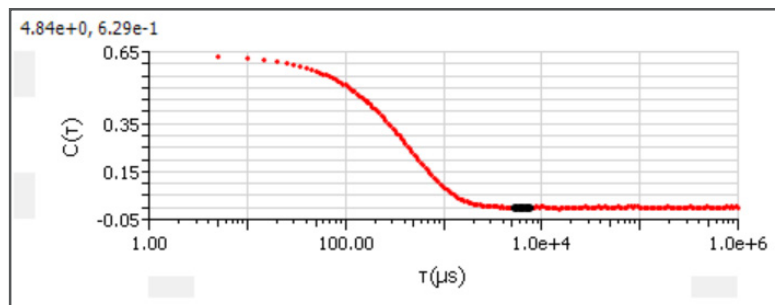
Notes/Label Au Nanoparticles Cancel

The capabilities of the NanoBrook depend heavily on both the instrument control software, Particle Solutions, as well as on Brookhaven's dedicated high-speed signal processing hardware, especially its TurboCorr correlator. DLS, ELS, PALS, and all other light scattering derived methods involve illumination of the sample using laser light, which is then measured at one of three scattering angles (for ELS and PALS this is always done in forward scatter). The light scattered is collected from forward, side and backscatter directions with a Single Photon Counting Module based on an Avalanche Photo Diode (APD). DLS time series data is processed in real time by the correlator, and then sent to Particle Solutions for fitting. Particle Size and Concentration can be measured simultaneously using our enhanced **DLSC** module. As one of the pioneers in light scattering, Brookhaven Instruments has a long history in the development of the digital correlator. Our current correlator offers 510 hardware channels with 100% efficiency and real-time operation over the entire delay-time range. Particle Solutions is the Windows compatible software used to process data for review.



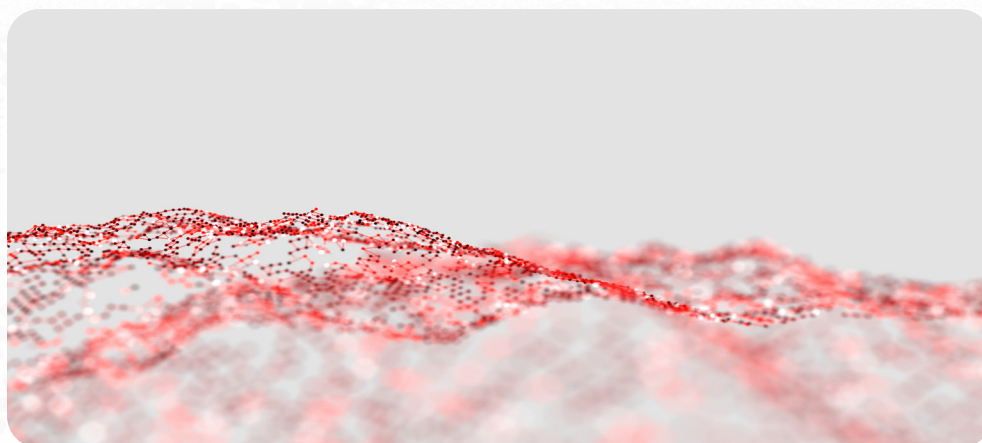
* Supports only models with 90 degree DLS capabilities

Particle Solutions v4.1 is the latest version of our powerful instrument control software. Particle Solutions v4.1 incorporates up to six different standard measurement types based on our core technologies: Dynamic Light Scattering (DLS), Dynamic Light Scattering with Concentration (DLSC), Electrophoretic Light Scattering (ELS), Phase Analysis Light Scattering (PALS), Microrheology (μ Rhe), Absolute Size Exclusion (ASEC), and Debye Plot (DBY) packaged into a single application. Particle Solutions 4 was the first version of our NanoBrook instrument control software to support advanced correlator control, improved guidance for measurement issues, compatibility with the Windows operating systems, and well as native support for Windows tablets and touchscreen devices and improved user interface offering easy navigation to commonly used operations. The most recent update introduces support for measuring unattenuated count rate and for measuring particle concentration either by way of calibration or comparison with a standard reference.



The **DLS Concentration Tool (DLSC)** is now available for select* NanoBrook models, starting with the release of Particle Solutions 4.1. **DLSC** can be used to estimate the concentration of nanoparticles, colloids, or macromolecules in dilute solutions, especially for samples where traditional concentration methods are unsuitable due to low UV absorbance.

* Requires 90 degree DLS capabilities along with direct laser power control



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