Spectral Content Profiling

Say goodbye to over-estimating DNA and RNA concentrations. Now you can know exactly what is in your sample. While the A260/A280 ratio is commonly used to check the purity of your DNA or RNA sample, there has always been a tendency to overestimate true DNA concentration due to other molecules absorbing at the same wavelength.

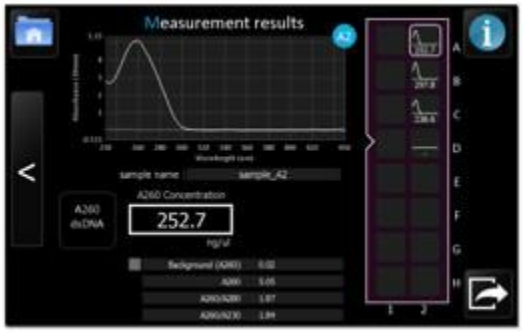
The innovation that overcomes the overestimation of nucleic acid content in your samples uses mathematical curve fitting of all common contaminants. This calculation is performed automatically, in a 2ul microcuvette. The result is a simple visual representation that reveals the true contents of your sample. This unique Spectral Content Profiling analysis creates a complete profile of your sample and reliably calculates the DNA, RNA, or protein concentration for you.

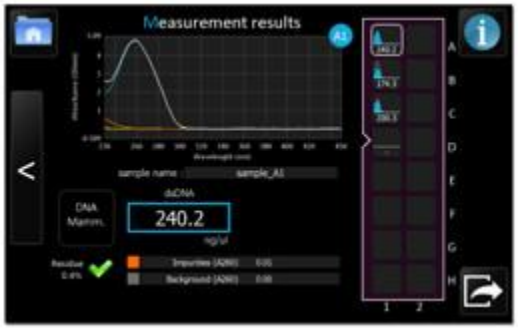
This eliminates the problems encountered when relying on A260 absorbance readings on their own. The typically overestimated concentrations lead researchers to dilute their samples too much, risking failure in their downstream applications.

Data examples on next page…

Three examples of DNA samples that are quantified with measurement of solution absorbance at 260 nm (A260) and with spectral content profiling:

dsDNA (Double Stranded DNA)





A260 result
Concentration: 252,7 ng/ul
A260/A280: 1.87

Spectral Content Profiling
Concentration: 240,2 ng/ul

Example: dsDNA sample. In the A260 result, the A260/A280 ratio is looking fine: 1,87. However, with the A260 measurement the dsDNA concentration is slightly overestimated because of small impurities that are present in the sample. The profile in the right picture shows all contents in the sample and the real dsDNA concentration is calculated correctly.

dsDNA + RNA

A260 result
Concentration: 297,8 ng/ul
A260/A280: 1.87

Spectral Content Profiling
Concentration: 174,3 ng/ul

Example: dsDNA sample with RNA. In the A260 result, the A260/A280 ratio is looking fine: 1,87. However, with the A260 measurement the dsDNA concentration is overestimated because RNA and DNA are both measured at 260 nm. With the 260nm absorbance it is difficult to divide between DNA and RNA. The profile in the right picture shows all contents in the sample and the real dsDNA concentration (blue line) is calculated correctly. The RNA concentration and other impurities (orange line) are subtracted from the total absorbance (white line).

dsDNA + Phenol

A260 result
Concentration: 236,6 ng/ul
A260/A280: 1,79

Spectral Content Profiling
Concentration: 200,3 ng/ul

Example: dsDNA sample with a small amount of phenol. In the A260 result, the A260/A280 ratio is looking fine: 1,79. However, with the A260 measurement the dsDNA concentration is overestimated because the phenol is not extracted from the absorbance. The profile in the right picture shows all contents in the sample and the real dsDNA concentration is calculated correctly (blue line). The phenol and other impurities (orange line) are subtracted from the total absorbance (white line).