

This Technical note provides instructions for calculating nucleic acid concentration using 260/280 Absorbance



Table 1: Pathlength correction values

| Sample volume | Pathlength correction |
|---------------|-----------------------|
| 200 µl | .56 |
| 100 µl | .29 |

1. Measure the DNA or RNA sample at both 260nm and 280nm wavelengths using the 2 wavelength measurement feature on the Modulus II Microplate.
2. Divide your OD₂₆₀ reading by .56 (200 µl sample volume) or .29 (100 µl sample volume) Multiply this number by the DNA or RNA constant from table 2

Table 2: Multiplication constants

| Analyte | Multiplication constant |
|---------------------|-------------------------|
| DNA | 50 |
| Single stranded DNA | 33 |
| RNA | 40 |

3. Multiply by the sample dilution factor
- To estimate DNA or RNA purity**
1. Subtract the blank value (well containing buffer) from your sample OD's
 2. Divide the OD₂₆₀/OD₂₈₀
 3. If the ratio of DNA or RNA OD₂₆₀/OD₂₈₀ is between 1.8 and 2, the DNA purity (free from protein contaminants) is ~90% or better

Concentration Calculation:

$$\frac{OD_{260}}{\text{pathlength}} \times \text{Analyte constant} \times \text{Sample dilution} = \text{Sample concentration}$$