

GeneQuant 1300 Spectrophotometer

GeneQuant™ 1300 (Fig 1) is designed to measure the concentration and purity of nucleic acid and protein samples; and the density of bacterial cell cultures at a broad range of sample volumes. It can be used with a wide variety of cuvettes for sample volumes from 3 µl to 2 ml.

GeneQuant 1300 is preprogrammed with a range of preset methods for the convenient quantitation of proteins, nucleic acids, and bacterial cell cultures. In addition, its wavelength scanning feature gives you the flexibility to design and store your own methods in a designated folder for easy access (Fig 2A).

GeneQuant 1300 Spectrophotometer delivers:

- **Convenience and ease of use:** Calibration curves, kinetics or ratio measurements are displayed at the touch of a button
- **Flexible analytical performance:** You can save up to 90 custom methods in a dedicated folder with an option for password protection. In addition, you can perform a full wavelength scan from 200 to 900 nm in less than 5 s with zoom facility, peak identification, and on-peak confirmation. Visual inspection of a nucleic acid scan can quickly alert you to the presence of impurities—this is especially useful with RNA samples
- **Choice of data output:** You can print to an integrated printer (optional) or to any suitable PC via a USB cable or wireless bluetooth accessory (optional)
- **Reliability and robust instrumentation:** Press-to-read feature reduces the amount of time the lamp stays switched on. Optics with no moving parts reduces the incidence of optical misalignment



Fig 1. GeneQuant 1300 has a large, easy-to-read display which enables all your results to be viewed simultaneously.

The key features of GeneQuant 1300 are summarized in Table 1 below.

Table 1. GeneQuant 1300 key features

Wavelength range	190-1100 nm
Wavelength calibration	Automatic upon switch on
Stored methods	90
Spectral bandwidth	5 nm
Wavelength accuracy	± 2 nm
Wavelength reproducibility	± 0.5 nm
Light source	Long-life stabilized Xenon
Detector	CCD Array
Dimensions	260 x 390 x 100 mm
Weight	4.5 kg
Power requirements	100-240 VAC ± 10%, 50/60 Hz, 50 VA

Applications

Nucleic acids (Fig 2B)

- Concentration and purity of nucleic acids
- Choice of units: $\mu\text{g/ml}$, $\text{ng}/\mu\text{l}$, $\text{pg}/\mu\text{l}$, $\text{pmol}/\mu\text{l}$, and pmol
- Correct for different cell pathlengths and dilution factors
- UV spectrum (220 to 330 nm) analysis for hybridization, PCR, and sequencing studies or for quantitation of minipreps after isolation by chromatography
- Characterize oligonucleotide primers (up to 66-mer) by conversion factor ($\mu\text{g}/\text{m}1$), molecular weight, theoretical absorbance ($\text{AU}/\mu\text{mol}$), and theoretical T_m

Bacterial cell cultures

- Measure OD_{600} prior to harvesting or induction

Proteins (Fig 2C)

- Methods include: Bradford, BCA, Lowry, Biuret, and direct UV measurement
- Choice of line fit
- Run up to 27 standards (including replicates)

Concentration measurements

- Concentration may be measured using a factor, single-point calibration, or multi-standard calibration curve

Kinetics (Fig 2D)

- Plot Absorbance against time
- Graphical display of slope
- Calculate $\Delta A/\text{min}$, correlation coefficient and rate of reaction

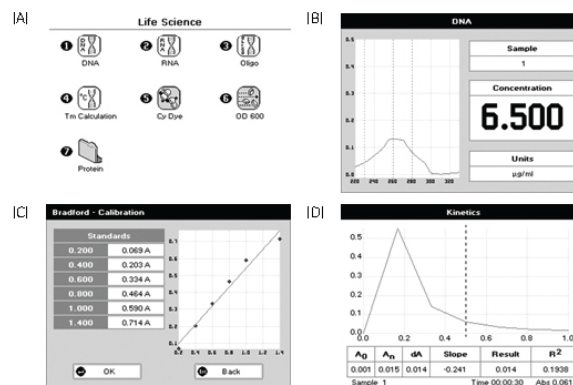


Fig 2. GeneQuant 1300 screenshots showing; (A) Simple interface for easy selection of applications; (B) A spectral scan of a nucleic acid sample; (C) kinetics profile and (D) Bradford calibration.

Ordering information

Product	Code
GeneQuant 1300 Classic	28918213
GeneQuant 1300 with printer	28918214
GeneQuant 1300 with Bluetooth	28918215
Accessories	
Quartz cells; Standard rectangular with lid; 2000-2500 μl working volume	80-2002-58
Quartz cells; Semi micro with lid; > 750 μl working volume	80-2002-77
Quartz cells; Ultra-microcell 10 mm pathlength; > 70 μl working volume	80-2103-69
Quartz cells; Ultra-microcell 5 mm pathlength (fill volume 7 μl)	80-2103-68
Capillary Cell; Capillary cell with 100 capillaries; > 3 μl working volume	80-2120-19
Capillary Cell; Spare capillaries (100); > 3 μl working volume	80-2104-67



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