

Cecil BioQuest & BioAquarius Spectrophotometer



	BioQuest	BioAquarius
Optical System	Single Beam	Symmetrical Double Beam
Monochromator	Littrow, 1200 L/nm grating	Czerny Turner 1200 L/nm grating
Wavelength Range	190-1000nm	190-900nm
Wavelength Accuracy	Better than 1nm	Better than 0.5nm
Wavelength Reproducibility	$\pm 0.1\text{nm}$	
Scan Speeds	1-4000nm/min	
Photometric Range	0-3A, 0-200T and C	
Photometric Noise	± 0.00004 at 1A rms	
Photometric Accuracy	± 0.005 or 1%	± 0.004 at 1A
Baseline Flatness	$\pm 0.002\text{A}$ p.t.p.	$\pm 0.001\text{A}$ p.t.p.
Method Storage	30 methods security code protected	
Spectral Storage		100 spectra, code protected
Derivative Spectra		1st to 4th
Overlaid Spectra		Up to 6
Concentration Curve Fitting	Linear, quadratic and cubic curves, to 30 standards or replicates	
Display Screen With Scrolling	Large LCD with 6 screen widths of scrolling for wide view	
Stability	$< 0.001\text{A/hr}$	$< 0.0001\text{A/hr}$
Computer Interface	Bi-directional serial RS232C and parallel ports	
Size and Weight	400 x 340 x 205; 18.6Kg	6.35 x 410 x 210; 33Kg

BioQuest

Compact design, 4nm optical bandwidth. Fully programmed for bioanalysis, scanning, integral printer version.

Bio Aquarius

Symmetrical double beam design, 1.8nm optical bandwidth. Fully programmed for bioanalysis. A very capable general purpose scanning double beam spectrophotometer

Bio Spectrophotometers

Specially pre-programmed for bioanalysis and molecular biology, the BioQuest and BioAquarius also have all the normal functions of UV visible spectrophotometers, scanning, time course plots, single wavelength measurements in Absorbance, Concentration or Transmittance, cell and wavelength programming, method storage etc.

Protein Analysis

Preprogrammed methods for all the normal protein analyses are provided, these include the following methods:

Bradford Biuret

Lowry (low sens.) BCA

Lowry (high sens.) Direct UV

Assays may also be carried out using the Warburg and Christian 2 or 3 wavelength methods and the Kalb and Bernlohr procedures, all of which are preprogrammed.

Nucleic Acid Assays

Concentration and purity may be determined by the methods of Warburg and Christian, Kalb and Bernlohr or using user selected parameters.

DNA, ssDNA, dsDNA, RNA and oligonucleotides may be quantified and examined for purity using two or three wavelength ratio methods.

Molecular concentration may be determined for Oligo Samples and theoretical melting points for DNA samples calculated using the nearest neighbour interaction model.

Concentration Curve Fitting

For more accurate measurements and for measurements where Beer's law is not obeyed a straight line quadratic or cubic curve may be fitted to up to 30 standards or replicate standards. Editing of suspect standards may be carried out and the final curve stored in code protected memory for future use.

Reaction Kinetics

Both single and up to 6 cell multi-cell Kinetics are readily carried out. Water or thermoelectric temperature control is available also sample stirring.

Reaction curves are displayed on screen and regression analysis applied to the user selected part of the curves to calculate results.

Advance Kinetics is possible providing such plots as Michaelis Menton and Lineweaver Burk etc., from which K_m and V_{max} are automatically calculated.

Small Sample Measurements

A return Micro Sipette system is available which uses a 75 μ l cell, measurements on samples of 300 μ l or less may be made with low levels of cross contamination.

A special holder accommodates cells of 50 μ l for measuring valuable small samples. These cells may be used in both sample and reference beams in the BioAquarius instrument.

For the ultimate in small sampling a special pipette loaded 5 μ l cell with 5mm pathlength is available.