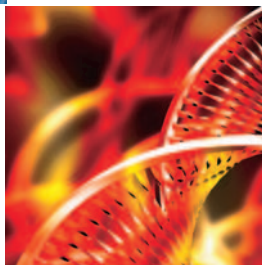


## BioMate 3

Convenient, accurate UV-Visible measurements for life science laboratories

Designed for performance and reliability, the Thermo Scientific BioMate™ 3 UV-Visible spectrophotometer delivers accurate data from a compact instrument. The BioMate 3 offers pre-programmed assay methods for the most common nucleic acid, protein, and cell culture methods. A variety of accessories adds convenience and provides Peltier temperature control, automation, and fiber optic sampling.



Thermo Fisher Scientific has an established reputation for producing quality spectrophotometers that spans over 60 years and over 650,000 units. This rich tradition includes notable instruments such as the AMINCO DW-2000 and the SPECTRONIC™ 20. Out of this experience in UV-Vis spectrophotometry comes the BioMate 3 – an instrument you can count on to meet the demands of your life science laboratory.

### Hardware Designed for Performance

The patented optical design of the BioMate 3 provides a compact, high-performance system with very few moving parts. A xenon lamp gives balanced light over the full instrument wavelength range of 190-1100 nm. Guaranteed for 3 years of continuous use, the xenon light source will provide many years of maintenance-free performance.

The BioMate 3 features a dual-beam optical system that includes an internal reference detector. This optical configuration offers significant advantages over a single-beam or diode array instruments, including compensation for lamp intensity changes, less risk to samples that absorb in the UV, and better overall long-term stability.

### Software Enhanced Flexibility

Embedded software in the BioMate 3 provides pre-programmed assays for RNA/DNA concentration or purity estimation, protein concentrations, cell growth, kinetics, or routine measurements.

For more intense applications, optional application software programs allow more sophisticated data collection, analysis, and reporting. Whatever your needs, research or routine, the BioMate 3 can be configured for your life science laboratory.



# Accurate, Reliable Performance for Life Science Laboratories

## Built-in Bioanalysis Software

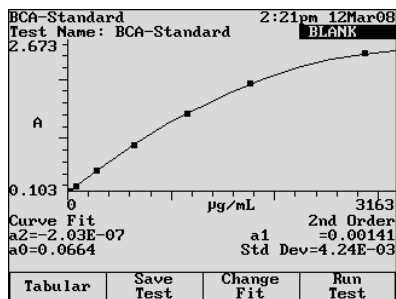
Are you tired of writing down absorption values from your spectrophotometer and working up the data in a notebook with a calculator or on a spreadsheet? The BioMate 3 offers timesaving, pre-programmed assays for fast, accurate results.

Nucleic acid concentration and purity estimations, protein concentration, and cell growth at 600 nm are all built into the BioMate 3. A flexible Oligo calculator feature for calculating molecular weight, theoretical  $T_m$  and oligo concentration factor is included. Other standard applications include single and multi-cell kinetics, wavelength scanning, and user-defined fixed wavelength measurements.

The built-in software is easy to modify for the needs of your laboratory. Simply change the parameters and save up to 120 methods to the internal memory.

## Simplify the Routine

Simple, intuitive menus and graphical SoftKeys ensure that the most routine measurements can be accessed in only a few keystrokes. From the Protein Concentration menu, only 2 key presses are required to start a BCA protein concentration assay.



The unique SmartStart™ feature allows you to place the most frequently used methods on the first screen each time the instrument is turned on. *Only run three different assays in your lab?* Stop searching through menus and make them SmartStart tests. SmartStart makes training users simple and allows easy access to the laboratory tests you use every day.

## Nucleic Acid Assays

The BioMate 3 provides all the necessary tests for determining the concentration and purity of nucleic acids. Nucleic acid concentrations can be determined by measuring at fixed wavelengths or by scanning. Scanning provides the added flexibility of visualizing the spectrum to look for possible contamination. All measurements can be baseline corrected to ensure the most accurate data, even with turbid samples.

DNA/RNA (260/280) 2:39pm 12Mar08			
Test Name: DNA/RNA (260/280) Cell # 4			
ID#	Abs 260nm	Abs 280nm	Abs Ref. µL
1	0.227	0.123	0.036
	Ratio	Conc. µg/mL	
Result	2.195	9.550	

Page 1 of 4, Sample 1  
Press ↑ or ↓ to view data

## Protein Assays

The BioMate 3 features automated methods for direct UV and colorimetric protein analysis saving valuable time and increasing lab productivity. With the push of only a few buttons, you are measuring standard assays like the Pierce BCA or a simple Coomassie assay. The calibration curve is automatically determined and sample measurements can begin immediately.

Protein Tests 2:28pm 12Mar08	
Coomassie/Bradford Std	
Coomassie/Bradford Micro	
Lowry-Standard	
Pierce Modified Lowry	
BCA-Standard	
Pierce Micro BCA (tm)	
Biuret	
Protein Conc. (280)	
Protein Conc. (205)	
Warburg-Christian	

Press ↑ or ↓ to select

Stored Tests	Basic ATC

## Small Volume Analysis

If you occasionally need to analyze small volume samples in addition to routine UV-Visible measurements, the nanoCell extends the measurement capabilities of your BioMate 3 to microliter samples. Analyze concentrated solutions without dilution. The interchangeable 0.2 mm and 1.0 mm pathlengths of the nanoCell allow for greater accuracy and sensitivity over a wide concentration range, identical to preparing 10- or 50-fold dilutions.



## Convenient Peltier Temperature Control

Traditional recirculating water systems rely on the transfer of heat to a large volume of liquid, resulting in slow temperature transitions and poor long-term temperature stability. Peltier cell holders offer exceptional temperature stability and fast temperature transitions. The Air-cooled Peltier accessory for the BioMate 3 delivers superior performance in an easy-to-use configuration. Designed for biologically relevant assays that require temperature control at 25°, 37°, 40° and 50 °C, the Air-cooled Peltier accessory delivers reliable temperature control from 20° to 60 °C with  $\pm 0.1$  °C accuracy and precision. Precision electronics allow thermal equilibrium to be reached rapidly inside the cell without exceeding the set point temperature, which can damage the sample.

The Air-cooled Peltier accessory is less expensive than most recirculating liquid temperature controllers and delivers much better performance with absolutely no maintenance.



## Enhanced Liquid Thermostatting

For temperature control with recirculating liquid, there is no better choice than the TPS-1500W Peltier Water Circulation Bath. Using a small volume (150 mL) of liquid, this accessory uses a Peltier for precise temperature control. If liquid recirculation is required for multi-cell experiments, look no further for performance. The sealed system and the small-volume of water used in the accessory allows accuracy to 0.05 °C. In addition to delivering powerful performance, this cost-effective accessory requires little to no maintenance.

## Traceable Performance Verification

Built-in and software-based performance verification provides an easy, automated tool for checking the performance of your BioMate 3. In accordance with GLP, each verification report gives the time, date, and instrument serial number.

Thermo Fisher Scientific provides a traceable standard verifying DNA concentration and the 260/280 ratio. Available in sealed ampules or in a sealed quartz cuvette provides assurance that your instrument is accurate.

A NIST-traceable Green Dye standard is available for testing wavelength and photometric accuracy. This standard is available at 0.25, 0.5, 0.75, and 1.0 absorption values and is certified at 260, 414, and 620 nm.



## Advanced Software Options

For general instrument control, teaching, and exporting ASCII data for advanced analysis, VISION/ite™ software delivers reliable data in an intuitive interface. Run multi-cell kinetics experiments or find peaks on wavelength scans.

For companies requiring user authentication, audit trails, electronic records, and signatures for 21 CFR Part 11 compliance, VISION/ite SE is the solution. User administration and software setup simple and IQ/OQ documentation is available.

For life science labs performing enzymatic food analysis, EnzLab is a convenient program to automate this analysis.

## Accessories for Your Sample



TPS-1500W Peltier Water Circulation Bath



Water Thermostatted Single Cell Holder



VERSA Fiber Optic Probe



3-position Water Thermostatted Cell Changer



Air-Cooled Peltier



nanoCell



DNA Standard



Sipper



Green Dye Standard

## BioMate 3 Life Science UV-Visible Spectrophotometer

Optical Design	Dual Beam (internal reference)
Spectral Bandwidth	5 nm
Light Source (typical lifetime)	Xenon (5+ years, 3 year warranty)
Detector	Dual silicon photodiodes
Wavelength	
Range	190 – 1100 nm
Accuracy	± 1.0 nm
Repeatability	± 0.5 nm
Slew Speed	11,000 nm/min
Scanning Speed	200 – 2200 nm/min
Data Interval	1.0, 2.0, 3.0, and 5.0 nm
Photometric	
Range	-0.1 – 3 A; 0.3 – 125 %T; ± 9999 C
Readout	Absorbance, % Transmittance, Concentration
Accuracy	0.5% or 0.005A, whichever is greater, up to 2.0 A; DNA: ± 0.25 ng/µL; Protein: ± 0.005 mg/mL
Noise	< 0.001A at 0 A; < 0.002A at 2 A; peak-to-peak at 340 nm
Drift	< 0.001 A/hour
Stray Light	< 0.1%T at 22, 340, and 400 nm
Display	Graphical 320 x 240 pixel backlit LCD, 3.8 x 2.8 in
Keypad	Sealed Membrane Keypad
Data Storage	Up to 120 methods
Printer (optional)	40 column graphical printer (internal); parallel port output in HP PCL format (text and graphics)
Communications	Bi-directional RS232C; LIMS capable ASCII text output
Languages	Software, output, and operator's manual: English, French, German, Spanish, Italian (user selectable)
Power Requirements	Selected automatically, 100 – 240 Volts
Dimensions	30 W x 40 D x 25 H (cm); 11.8 x 15.7 x 9.8 (in)
Weight	8.6 kg (19 lbs)
Warranty	1 year; lamp: 3-years of continuous use

### Local Control Software Features

### User Configurable Built-in Assay Methods:

DNA ratio/concentration with or without scanning (260/280 and 260/230)
Direct nucleic acid concentration at 260 nm
Direct protein at 280 nm and 205 nm
Coomassie/Bradford (Standard and Micro)
Lowry (Standard), Pierce® Modified Lowry
BCA (Standard)
Pierce Micro-BCA
Biuret
Warburg-Christian
Cell growth (with scaling factor)
Oligo calculator: molar absorptivity, molecular weight, factor and theoretical T <sub>m</sub>
Kinetics
Absorbance, %T, Concentration
Standard curve
Absorbance ratio
Absorbance difference
Multiwavelength Fixed Wavelength Analysis
Survey Scanning
Performance Validation
Multi-Cell Kinetics (with VISION/ite) software

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**Africa** +43 1 333 5034 127  
**Australia** +61 2 8844 9500  
**Austria** +43 1 333 50340  
**Belgium** +32 2 482 30 30  
**Canada** +1 800 530 8447  
**China** +86 10 8419 3588

**Denmark** +45 70 23 62 60  
**Europe-Other** +43 1 333 5034 127  
**France** +33 1 60 92 48 00  
**Germany** +49 6103 408 1014  
**India** +91 22 6742 9434  
**Italy** +39 02 950 591

**Japan** +81 45 453 9100  
**Latin America** +1 608 276 5659  
**Middle East** +43 1 333 5034 127  
**Netherlands** +31 76 579 55 55  
**South Africa** +27 11 570 1840  
**Spain** +34 914 845 965

**Sweden/Norway/Finland** +46 8 556 468 00  
**Switzerland** +41 61 48784 00  
**UK** +44 1442 233555  
**USA** +1 800 532 4752  
[www.thermo.com](http://www.thermo.com)

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