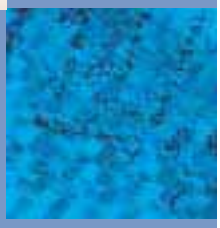
VWR INTERNATIONAL

Spectronic GENESYS 10 Bio UV-Visible Spectrophotometer



Versatile, accurate UV-Vis for life science applications

In busy life-science labs, nothing can be left to chance. There's no room for error. Time is critical. Thermo Electron Corporation, with over 60 years of experience in UV-Visible spectrophotometry, has designed the Spectronic™ GENESYS™ 10 Bio spectrophotometer – the instrument you can count on to meet the demands of your laboratory.

Rapid, Reliable Nucleic Acid and Protein Analysis Results

The Spectronic GENESYS 10 Bio spectrophotometer puts leading-edge technology into a compact, convenient design. You get all the versatility and flexibility you need to obtain accurate, reliable measurements for your biotech research. The instrument features a user-friendly interface, powerful optics, rugged design, versatile software capabilities, optional built-in printer, and much more.

The time-saving software makes your job easier. Just put in your sample and obtain accurate results in seconds. Pre-programmed procedures enable even first-time users to:

- Measure DNA ratio and concentration with and without scanning
- Measure protein concentrations using Bradford, Lowry, BCA, and Biuret reagents
- Measure concentrations of dsDNA, ssDNA, RNA, and oligonucleotides
- Monitor cell growth
- Perform oligo calculations of molecular weight and Tm

Plus, All the Capabilities of a Standard Lab Spectrophotometer

The Spectronic GENESYS 10 Bio spectrophotometer is not just dedicated to DNA and protein analyses. It is an ideal general-purpose spectrophotometer for such life science applications as multi-wavelength and simple kinetic-reaction measurements.

This instrument is monochromator-based, offering you a full wavelength range and superb accuracy.

Everything a Life Sciences Lab Needs and More...

- Customize your instrument for your specific applications. Use the unique SmartStart™ feature to easily create a power-up menu that displays only the tests that your lab uses. This saves time and reduces error.
- Save time by using the built-in Oligo calculator to determine the molecular weight and the theoretical Tm (used to determine the PCR annealing temperature) of your oligonucleotides.
- Save time and reduce setup error by saving your programmed methods, and protect your saved methods with passwords.
- Easily ensure that your instrument is performing to specification with logs and documented evidence using built-in and/or accessory traceable instrument performance standards.

Hardware

- Optical specifications comparable to instruments twice their size
- High-resolution graphics display
- Small footprint saves bench space
- Easy-to-use keyboard to set up tests, print results, and move cell changer

Additional Features and Accessories

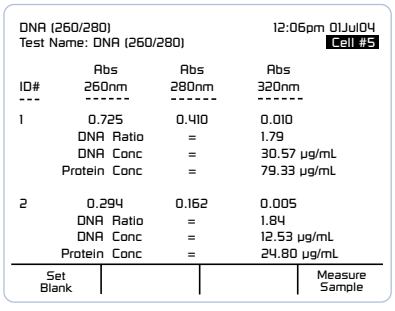
- Test tube holders
- Affordable sipper accessories
- Multi-cell holders measure multiple samples with the push of a button
- Micro-cells for small volumes
- Built-in printers show all parameters, date, time, test name, data, final results, and statistics

For Busy Lab Operators, it is the Smart Choice

This spectrophotometer features the unique SmartStart screen that lets you select only the tests you require. Simply pre-program one, two, or more of your frequently used methods. When you turn the instrument on, the boot-up screen immediately shows the selected tests – without additional scrolling. After your data is acquired, you can print all instrument parameters, date, time, sample number, and data on an optional printer.

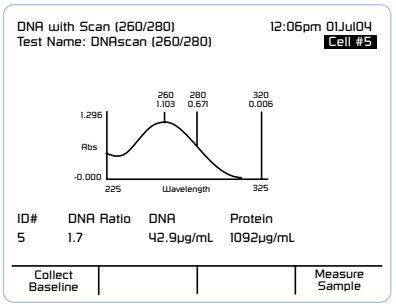
DNA/Protein Concentration and DNA Purity

- Test results appear on the screen within seconds.
- Parameters for determining DNA purity, DNA concentration, and protein concentration are pre-selected; use default parameters or customize them to specific needs.
- Choose whether or not to display protein concentration on the results screen.
- An optional reference wavelength corrects for the effect of turbidity.
- Built-in dilution-factor calculator delivers direct concentration results.



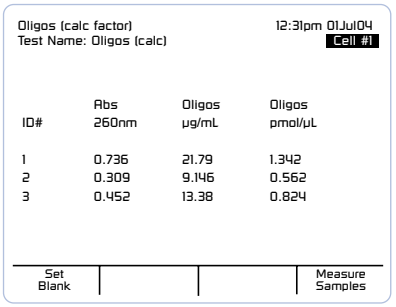
DNA/Protein Concentration and DNA Purity with Scan

- Provides an easy, one-step operation
- Displays scan of DNA sample and results
- Offers the option to add reference wavelength and dilution factor



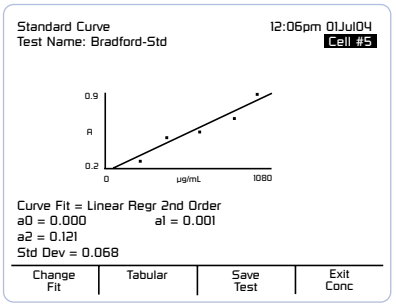
Direct UV/DNA Measurements

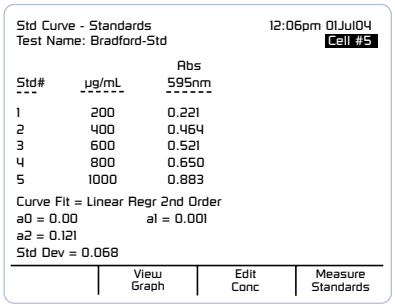
- Measures direct ssDNA, dsDNA, RNA, and oligo concentrations using absorbance at 260 nm
- Measures oligo concentrations using base sequence calculator
- Enables operators to select pre-set units or create new ones



Protein Concentration

- Offers seven standard curve methods for measuring protein – Bradford, Lowry, BCA (all with standard and micro) plus Biuret
- Allows use of pre-set or user-defined wavelength, units of measure, and curve fit
- Provides three UV methods – direct 280 nm, direct 205 nm, and Warburg-Christian calculation
- Offers print-outs that show the standard curve and results



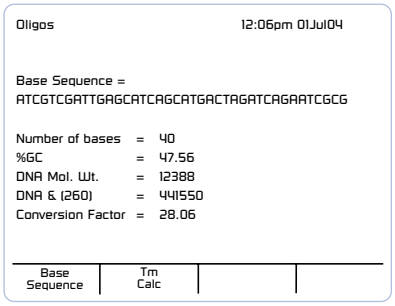


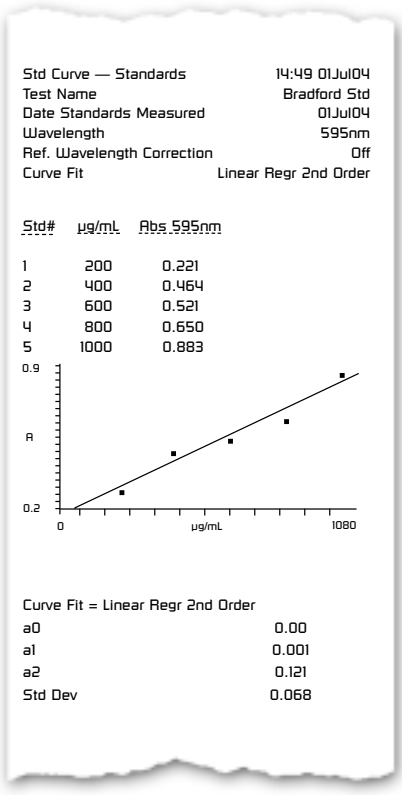
Cell Growth

- Monitors cell growth by measuring absorbance at 600 nm
- Determines when to harvest cells

Oligo Calculator

- Enter in a base sequence and the instrument calculates molecular weight, theoretical Tm, and oligo concentration factor.
- Choose from one of four Tm calculation methods.





Typical printout showing standard curve data and plot.

Built to Perform. Built to Last

As a researcher, you need quick answers from your tests or data to support theories of molecular-reaction mechanisms. Whatever your need or application, the Spectronic GENESYS 10 Bio spectrophotometer can meet it.

The instrument features high-quality optics for accurate and precise measurements. Its long-life xenon lamp delivers an outstanding signal-to-noise ratio, negligible drift and no warm-up time for accurate, precise measurements over the 190 – 1100 nm wavelength range. It also provides calibrated wavelength peaks that are used as built-in wavelength standards for performance verification.

Spectronic GENESYS 10 Bio Spectrophotometer – Additional Benefits

- 5 nm bandwidth for DNA peak resolution
- 100 nm range survey scan to find peak wavelengths
- Good stray-light rejection for excellent linearity
- Ability to save methods to non-volatile memory
- Customize your instrument using the SmartStart feature to display your tests on the boot-up menu
- Automatic cell correction for cell-to-cell precision with unmatched cuvettes

VISION*lite* Software for Expanded Capabilities

VISION*lite*™ software offers a wide range of data handling, recording, and processing capabilities. You can easily perform wavelength scans, kinetics, single and multi-wavelength, and standard curve analyses with this software.

Scan – Collection of Sample Spectrum

This software application records a spectrum of your sample for measurement or characterization. Scan options include:

- A selectable wavelength range allowing full or specific spectrum investigations
- Peak pick which identifies wavelength peaks or valleys for further fixed-wavelength analysis
- Up to 13 spectral overlays
- Auto scaling
- Data saving
- Data file exporting

Rate – Measurements of Reaction Kinetics

This software application measures the change in your samples at a specific wavelength over a period of time. Rate capabilities include:

- Measurements of up to 100 samples
- Up to 13 graph overlays
- Automatic enzyme activity calculation
- Data rescale
- Automatic data storage
- Import and export of results

Fixed – Measurements at Pre-selected Wavelengths

This application performs measurements from one to 31 wavelengths which can be performed with a reference wavelength for automatic correction of a shifting background absorbance for DNA or turbid sample analyses. Results can be automatically stored and exported.

Quant – Determination of Sample Concentration

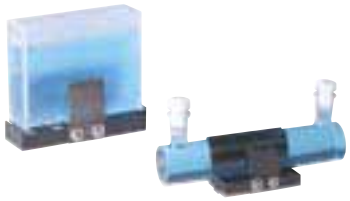
This software application measures sample concentrations based on either a standard curve or an entered calibration factor. Standard curve graphs and tabular data, along with calibration curve parameters (slope and intercept) are viewed on one screen. Optional parameters include:

- Four curve-fit options for non-linear standard curves
- Measurements of up to 20 standards
- The choice of 11 pre-programmed units
- Auto data save
- Data exports

Faster Measurements Using Sample Holder of Your Choice

Before the software can work its magic, you need an instrument versatile enough to accommodate a wide range of optional sample holders. The Spectronic GENESYS 10 Bio spectrophotometer gives you an impressive range of choices for fast, efficient sample measurements.

Longpath Cell Holders



- Used to measure low absorbance samples without the time and error of physically concentrating the sample
- Used to increase sensitivity of readings
- Hold rectangular or cylindrical cells
- Hold up to three 50 mm pathlength cells in 6-Position Cell Holder or one 100 mm pathlength cell in Single Cell Platform

Flow-Through Accessory

- Great for fast sample throughput of batch runs
- Optical glass or quartz flowcell
- Selectable tubing and pumping times accommodate sample volumes from 2 – 15 mL
- Option to return sample to vessel

Filter Holders

- Used to measure transmittance and cut-off wavelengths in glass and filters
- Both spring-loaded and adjustable holders are available

Funnel Flowcell

- Fast sample throughput
- Ideal for quick, inexpensive bulk sample processing
- Used with external vacuum pump or water aspiration system
- Used on Single Cell Platform

Test Tube Holder

- Ideal for COD tubes and glassware from reagent kits
- Holds test tubes up to 25 mm diameter and up to 102 mm tall

MODEL	VWR Cat. Number
Spectronic GENESYS 10 Bio, single cell	57971-352
Spectronic GENESYS 10 Bio, single cell holder, printer	57971-354
Spectronic GENESYS 10 Bio, 6-position cell changer	57971-356
Spectronic GENESYS 10 Bio, 6-position cell changer, printer	57971-358

Spectronic GENESYS 10 Bio Spectrophotometer	
Spectral Bandwidth	5 nm
Optical System	Split-beam, grating-based, dual detectors
Lamp Source: Typical Lifetime	Xenon: 5 years
Wavelength:	
Range	190 – 1100 nm
Accuracy	± 1.0 nm
Repeatability	± 0.5 nm
Graphic Display	320 x 240 pixel LCD, 3.8" x 2.8"
Photometric:	
Range	0.3 – 125%T; -0.1 – 3.0A; 0 – 9999 C
Readout	Absorbance, Transmittance, Concentration
Accuracy	0.5% of reading or 5 mA, whichever is greater, up to 2A
Noise	< 1 mA at 0A; < 2 mA at 2A, peak-to-peak at 340 nm
Drift	< 1 mA/hour after warm-up
Stray Light	< 0.1%T at 220 and 340 nm
Standard Interface	Bi-directional RS-232C
Standard Cell Holder	1-position or 6-position automatic cell holder
Keypad	Membrane keypad
Software	DNA ratio/concentration and protein concentration with or without scanning Direct oligo concentration at 260 nm Direct protein at 280 nm and 205 nm Protein standard curves Cell growth Oligo calculator: absorptivity, molecular weight, factor and theoretical Tm Absorbance, %T, Concentration Standard curve Absorbance ratio Absorbance difference Multiwavelength Kinetics Survey Scan Performance Validation
Test Storage	Up to 40 sets of test parameters
Languages	Software, printout, and Operator's Manual: English, French, German, Spanish, Italian (user-selectable)
Printer (optional)	40-column internal graphical
Power Requirements	Selected automatically; 100 – 240 volts
Dimensions	330 W x 410 D x 235 H mm; (13" x 16" x 9")
Weight	8.6 Kg (19 lb.)
Warranty	1 year

BR50713_E 07/04M

ISO 9001

Thermo Electron Scientific Instruments Corp., Madison, WI USA is ISO Certified.

Thermo ELECTRON CORPORATION