

GENESYS 10^{UV-VISIBLE}

Spectrophotometers



Meet the New Laboratory Standard

Researchers, scientists and technicians worldwide depend on Spectronic Unicam to provide UV-Visible spectrophotometers to suit their specific applications and needs. We are pleased to introduce the new laboratory standard, the **GENESYS™ 10 spectrophotometer**.

Powered to Perform, Priced to Surprise

GENESYS spectrophotometers have long been known as the dependable choice for busy laboratory environments. The GENESYS 10 gives you all the features you have come to expect from a GENESYS spectrophotometer including a rugged design, a user-friendly interface and unrivaled reliability. The GENESYS 10 also provides the functionality of an expensive spectrophotometer at an affordable price. Both the Visible and UV-Visible GENESYS 10 models feature a powerful optical design, flexible sample handling and versatile software capabilities that make the GENESYS 10 the smart choice for testing water and wastewater, food and beverages, inorganics as well as quality control of chemicals or life science applications.

GENESYS 10 UV-Visible spectrophotometers truly are powered to perform and priced to surprise!

High-Quality Optics for High-Performance Results

High-quality optics are absolutely essential for obtaining accurate and precise spectrophotometric measurements. Both GENESYS 10 models utilize a unique optical design* that dramatically reduces stray light and produces a precisely focused image on the sample. This imaging allows the use of microcells without special cell holders and ensures the accuracy of your results every time.

The GENESYS 10 UV-Visible model features a xenon flashlamp and dual detectors for an outstanding signal-to-noise ratio. The xenon lamp flashes only when needed during measurements resulting in extended lamp life and lower operating costs. An added benefit of the xenon lamp is its distinct and uniform emission lines that allow wavelength accuracy and resolution to be verified across the wavelength range. Do you need quick, accurate measurements? The GENESYS 10's high-performance optics will do the work for you!

*Patent Pending

GENESYS 10 Vis

An optional, built-in, 3" (76.2mm) wide printer documents all parameters including time and date, test name, data and final results. It displays graphs, statistics and sample number – perfect for Good Laboratory Practice (GLP) requirements.



Thanks to a small instrument footprint, you have plenty of room for other lab equipment.

Simple keyboard-based operation and "Softkeys," specific to each screen, simplify setting up the instrument with your laboratory's test parameters.

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GENESYS 10 UV

A large graphical display allows easy viewing of instrument conditions and results.

6-Position Cell Holder models hold a blank and up to five samples in 10mm square cuvettes or (10mm or 1/2") test tubes. The standard turret will measure all six positions automatically or can be rotated to specific positions by pressing the cell changer buttons. The powerful optics of the GENESYS 10 even allow you to measure 70µL samples without a special holder.

A powerful xenon lamp provides high-energy light throughput for accuracy and precision.

Long-lasting xenon lamp operates for years without replacement.

Routine Absorbance and Transmittance measurements can be determined from the instrument's main screen using a very simple 3-step process. Concentration measurements only require two additional steps: measuring and entering the concentration of the standard.

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Cell changer buttons rotate samples into position.

Cleanable, chemical-resistant surfaces and rugged design make the GENESYS 10 the ideal choice for harsh laboratory environments.

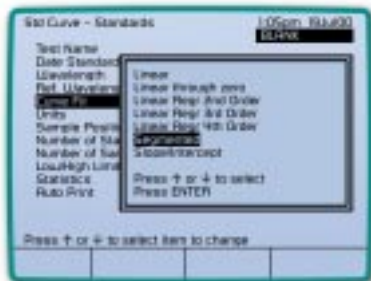


Complex Calculations Made Easy

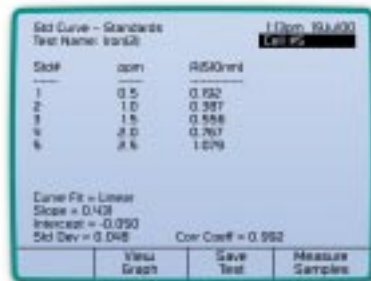
The GENESYS 10 has been programmed to perform complex calculations as effortlessly as your simple measurements. As you begin your tests, the GENESYS 10 instantly zeroes your blank and displays each cell measuring position throughout the test.

All the test programs shown below allow you to set the measurement mode, run single or multiple samples, print automatically and perform statistics on the final results. Program the instrument once with each of your customized tests, name them, and they will always be available for quick and easy recall. A total of 40 tests can be saved with the option to lock tests for security.

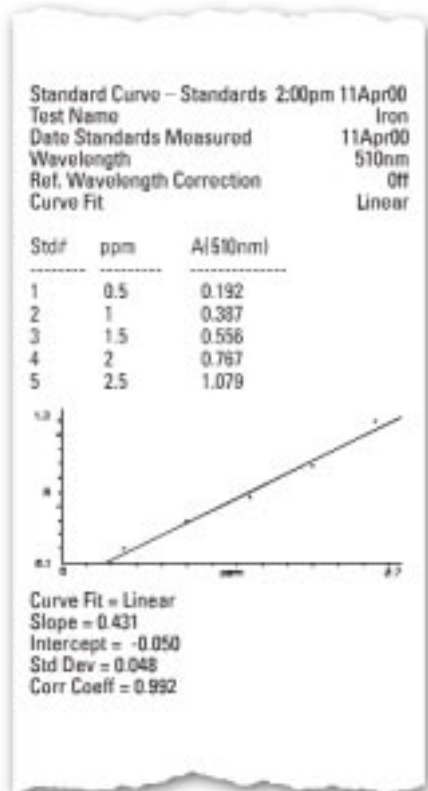
STANDARD CURVE



Set-up screen for preparing standard curve showing curve fit options



Iron standard curve showing time and date of standard curve and curve fit parameters



Printout from iron determination showing test parameters and standard curve

- Shows standard curve with date prepared
- Offers seven standard curve fit options
- Displays data in any of 10 pre-programmed units or allows you to create your own
- Allows measurement of up to 15 standards

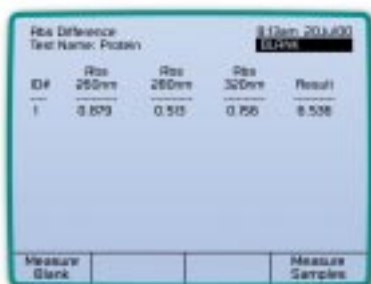
ABSORBANCE RATIO



Results of DNA purity measurement showing test name, absorbance values and out-of-range indication

- Optional reference wavelength
 Formula: $\frac{Abs_{\lambda_1}}{Abs_{\lambda_2}}$
 or: $\frac{Abs_{\lambda_1} - Abs_{ref}}{Abs_{\lambda_2} - Abs_{ref}}$

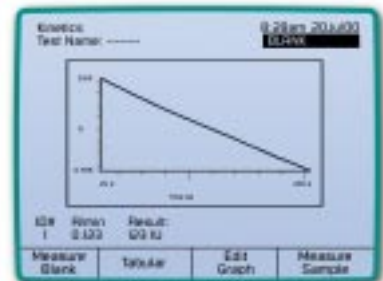
ABSORBANCE DIFFERENCE



Calculation of protein concentration in Absorbance Difference mode using Warburg-Christian equation

- With optional 3rd wavelength for turbidity correction
- Programmable factors to calculate corrected protein and nucleic acid concentration

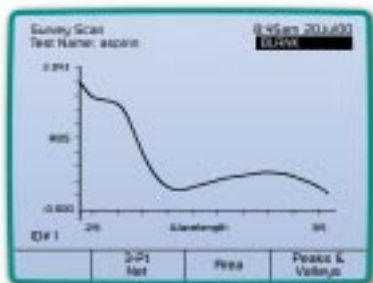
KINETICS



Kinetics run for alcohol dehydrogenase showing curve and concentration calculation

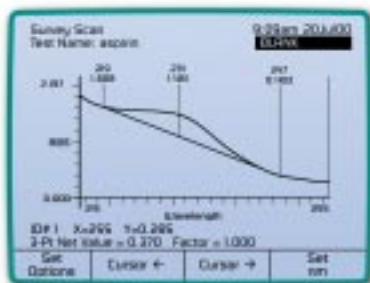
- Measure reactions in intervals as low as one second
- Measure reactions for up to 96 hours
- Calculate reaction rates and display results in units of your choice
- Rescale to get rates over linear phases of the reaction
- View on screen or on optional analog recorder

SCAN



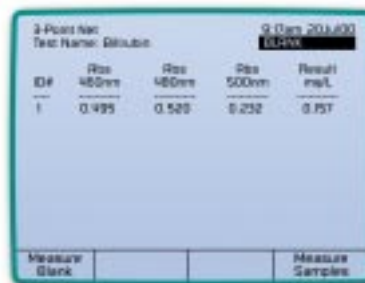
Scan of dissolved aspirin with screen showing data manipulation options

- Scan at four different scan speeds
- Label peaks and valleys
- Select specific wavelengths to report values – QC applications
- Expand scale
- Calculate 3-point net and area under the curve



Screen showing calculation of 3-point net absorbance

3-POINT NET



Results for bilirubin measurement using 3-point net calculation

- Compensate for a sloping baseline caused by turbidity

PERFORMANCE VALIDATION

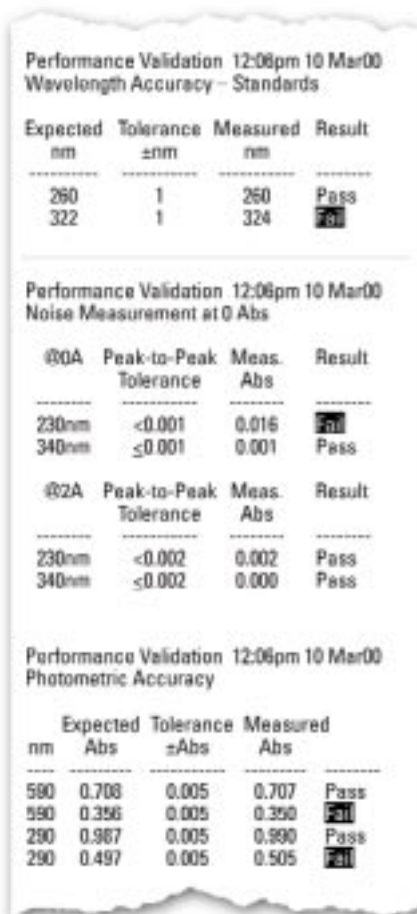


Selection of tests in Performance Validation program



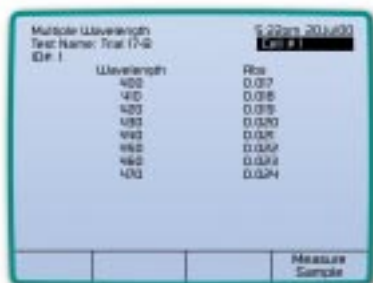
Screen used to enter desired wavelength accuracy tolerance

- Perform routine performance checks on your instrument
 - Time, date, serial number shown on printout
 - Verify then document instrument performance to satisfy regulatory requirements
 - Use with SPECTRONIC® Standards for performance validation
- **Wavelength Accuracy:** Uses internal lamp or filter standards: Visible model has built-in didymium filter; UV model uses multiple wavelengths on the xenon lamp.
- **Photometric Accuracy:** Use SPECTRONIC Standards or third-party standards. Set tolerances to flag out-of-range results.
- **Noise:** Measurements at OA done at 230, 340 or 500nm. Set your own tolerances; see actual results with Pass/Fail indication.
- **Stray Radiant Energy:** Measure stray light of optical system at 220, 340, and 400nm. Get Pass/Fail result.
- **Diagnostics:** Check internal printer, RS-232, and Analog Output.



Typical printout showing wavelength accuracy, photometric accuracy and noise measurements

MULTIWAVELENGTH



Measurement of multiple wavelengths at 10nm increments

- Measure absorbances of up to 31 wavelengths on one sample
- Calculate concentration at each wavelength

GENESYS

Smart. Solid. Simple.

Specifications for GENESYS 10 SERIES SPECTROPHOTOMETERS

	GENESYS 10 Vis	GENESYS 10 UV
Spectral Bandwidth	5nm	5nm
Optical System	Single-beam, grating-based, single detector	Split-beam, grating-based, dual detectors
Lamp Source; Lifetime	Tungsten-halogen; 1000 hours typical	Xenon; 5 years typical
Wavelength:		
Range	325–1100nm	190–1100nm
Accuracy	± 1.0nm	
Repeatability	± 0.5nm	
Display	320 x 240 pixel LCD, 3.8" x 2.8"	
Photometric:		
Range	0.3–125%T; -0.1–3.0A; 0–9999C	
Readout	Absorbance, Transmittance, Concentration	
Accuracy	0.5% or 0.005A, whichever is greater, up to 2A	
Noise	≤ 1mA at 0A; ≤ 2mA at 2A, peak-to-peak at 500nm	≤ 1mA at 0A; ≤ 2mA at 2A, peak-to-peak at 340nm
Drift	≤ 2mA/hour after warmup	≤ 1mA/hour after warmup
Stray Light	≤ 0.1%T at 340 and 400nm	≤ 0.1%T at 220, 340 and 400nm
Standard Interface	Bi-directional RS-232C	
Standard Cell Holder	1-Position or automatic 6-Position Cell Holder	
Keyboard	Membrane keypad	
Software	Absorbance/Transmittance/Concentration, Standard Curve, Absorbance Ratio, Absorbance Difference, Kinetics, Survey Scan, 3-Point Net, Multiwavelength, Performance Validation	
Test Storage	Up to 40 sets of test parameters	
Languages (user selectable)	Software and Printout: English, French, German, Spanish, Italian Operator's Manual: English, French, German, Spanish, Italian	
Printer (optional)	40-column internal graphical	
Analog Output (optional)	0–1V for -0.3 to 2.5A	
Power Requirements	Selected automatically; 100–240 Volts	
Dimensions	330W x 410D x 235H mm (13" x 16" x 9")	
Weight	8.6Kg (19lb)	
Warranty	1 Year	

Faster Measurements Using the SAMPLE HOLDER of Your Choice

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



Flow-Through Accessory:

- Optical glass or quartz flowcell
- Great for speedier sample throughput
- Selectable tubing and pumping time accommodates sample volumes from 2-15mL
- Option to return sample to vessel



Longpath Cell Holders:

Used for increased sensitivity of tests

- Holds rectangular or cylindrical cells
- Holds up to three 50mm pathlength cells in 6-Position Cell Holder or one 100mm pathlength cell in Single Cell Platform

Ordering Information for

GENESYS 10 SERIES SPECTROPHOTOMETERS

INSTRUMENTS

335900	GENESYS 10 Vis Spectrophotometer, 325–1100nm range, with single cuvette holder, for 100–240V 50/60Hz, US line cord
335900A	Same as 335900, but with built-in Analog Output
335900P	Same as 335900, but with built-in Printer
335900AP	Same as 335900, but with built-in Analog Output and Printer
335901	GENESYS 10 Vis Spectrophotometer, 325–100nm range, with 6-Position Cell Holder, for 100–240V 50/60Hz, US line cord
335901A	Same as 335901, but with built-in Analog Output
335901P	Same as 335901, but with built-in Printer
335901AP	Same as 335901, but with built-in Analog Output and Printer
335902	GENESYS 10 UV Spectrophotometer, 190–1100nm range single cuvette holder, for 100–240V 50/60Hz, US line cord
335902A	Same as 335902, but with built-in Analog Output
335902P	Same as 335902, but with built-in Printer
335902AP	Same as 335902, but with built-in Analog Output and Printer
335903	GENESYS 10 UV Spectrophotometer, 190–1100nm range, with 6-Position Cell Holder, for 100–240V 50/60Hz, US line cord
335903A	Same as 335903, but with built-in Analog Output
335903P	Same as 335903, but with built-in Printer
335903AP	Same as 335903, but with built-in Analog Output and Printer

Note: To order an instrument with a Europlug, add -02 to any of the catalog numbers shown above.
To order an instrument with a UK plug, add -04 to any of the catalog numbers shown above.

ACCESSORIES

335988	Internal Printer Assembly for GENESYS 10 Vis or GENESYS 10 UV spectrophotometer
336014	Test Tube Holder – Accommodates test tubes up to 25mm in diameter and up to 102mm tall, C.O.D. reagent vials, and Hach vials (24mm diameter and 60mm tall)
335917	Adjustable Filter Holder – Accommodates glass or plastic filters up to 50mm long x 80mm tall x 10mm thick. Minimum thickness of 1mm
335428	Filter Holder – Accommodates filters/lenses from 1mm to 8mm thick
336028	Single Cell Holder – Accommodates 10mm test tubes, 10mm square cuvettes, short pathlength cuvettes with spacers and 10mm ultra-microcell
335911	Cylindrical Longpath Cell Holder – Accommodates a cylindrical cell with 10–50mm pathlength, 22–25mm diameter
335912	Rectangular Longpath Cell Holder – Accommodates a rectangular cell with 10–50mm pathlength, 12.5mm wide
335975	Flowcell System for measurements in the 325–1100nm wavelength range. Includes 335982 Peristaltic Pump, 335171 Optical Glass flowcell, and 335920 Accessory Door Kit
335976	Flowcell System for measurements in the 190–1100nm wavelength range. Includes 335982 Peristaltic Pump, 335172 Quartz flowcell, and 335920 Accessory Door Kit
336012	Cylindrical Longpath Cell Holder – Accommodates a cylindrical cell with 10–100mm pathlength. Requires 335916 Single Cell Platform
335112	Rectangular Longpath Cell Holder – Accommodates a rectangular cell with 10–100 pathlength. Requires 335916 Single Cell Platform
333150	SPECTRONIC Standards
335079	Thermal Block – Maintains temperature of a single cuvette between 20–80°C



Test Tube Holder:

Ideal for COD tubes and glassware from reagent kits

- Holds test tubes up to 25mm in diameter and up to 102mm tall



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
- Used with external vacuum pump or water aspiration system
- Used on Single Cell Platform

More Focus • More Knowledge • More Choice

Spectronic Unicam is a company dedicated to the manufacture, sale and support of Visible and UV-Visible spectrophotometers. Formed from the integration of two long-established spectroscopy companies, Spectronic Unicam's unique focus gives customers access to premium quality technical support and knowledgeable applications advice. Our unique technology focus allows us to provide a wider choice of customer driven products and accessories. By choosing Spectronic Unicam, our customers will have chosen a spectrophotometer that exactly matches their requirements.

SPECTRONIC is a registered trademark and GENESYS is a trademark of Spectronic Instruments, Inc.
Spectronic Unicam is an ISO 9001 Systems Certified Company.

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