Spectro UV-VIS Double Beam Research

Spectrophotometer UV-VIS Double Beam

Model UVD-3500

Spectro UV-VIS Double Beam UVD 3500 Research Spectrophotometer is a superior instrument for the research laboratory and is an advanced and affordable system that generates accurate and reproducible measurements. UVD-3500 spectrophotometer is accurate, reliable, and an exceptional value. With its narrow beam design, the system provides optimal and reproducible results for micro and macro samples with high resolution.

Spectro UV-VIS Double Beam UVD 3500 has a powerful built in software which permits this instrument to be linked to a computer and a printer to display the photometric and spectral data on the PC monitor. This spectrophotometer is rugged, reliable, affordable, and maintenance free. Spectro UV-VIS Double Beam UVD 3500’s enhanced transmission and full reflection makes this double beam spectrophotometer highly effective and reduces noise.

Spectro UV-VIS Double Beam UVD 3500’s advantage is its accurate wavelength, ease of operation, versatile software application, and effortless optional accessory installation. This instrument can be used for analyzing solid samples through use of an optional reflectance accessory and integrating sphere.

This Spectro can be used only linked to a PC.

Labomed, Inc. is certified by ISO 9001-2000, has CE Conformity and is FDA Licensed.

Spectro UV-Vis Double Beam (Model UVD-3500) with variable bandwidth of 0.5, to 5.0 nm is a high-performance, reliable, and exceptional value instrument which is the hallmark of Labomed UV-Vis spectrophotometers.

Features

- **Excellent Performance:** The high-performance blazed holographic grating and the optimized CT-type monochromator reduce stray light, and widen the photometric range.
- **Ideal baseline stability:** Double-beam dynamic feedback ratio recording photometric system coupled with reasonably designed electric control system ensures high stability of the instrument baseline.
- **High resolution:** The unique optic design of full-transmission and full-reflection satisfies both needs of the double beam optic and the enhancement of the light energy of instrument so as to reduce noise and guarantees high resolution.
- **Accurate wavelength:** The automatic wavelength driving system and the automatic light source interchanging system ensures wavelength accuracy and high holistic performance of instrument.
- **Easy accessories replacement:** The detachable structure of the sample chamber facilitates change of a wide range of optional accessories and ensures wavelength accuracy of instrument.
- **Easy light replacement:** The open-type design of light source chamber, socket deuterium lamp and socket tungsten halogen lamp facilitates light source over replacement, simplify maintenance and reduces operation error.
- **Versatile Application:** The application software on Windows platform offers rich operation and data processing facilities, representing to the full the fascination of modern computer technology.
- **Computer System is optional (NOT INCLUDED).**

Software Specifications

- **The windows software**
- **Such operations as photometry measurement, spectrum measurement, quantitation measurement and kinetic measurement are offered in UV-Win Windows applications.**
- **Multi-wavelengths photometric measurement at up to 10 wavelengths with the arithmetic calculation according to the user-entered formula.**
- **Up to 10 spectra and time-course curves can be measured and recalled in memory with data-handling of arithmetic calculation, logarithmic calculation, reciprocal calculation, smooth, derivate (1st ~ 4th), Abs to/ from %T conversion and peak pick.**
- **Up to 24 standards can be entered and measured for the fit of calibration curve with order to 1st ~ 4th.** Offered are the quantitation methods of single wavelength, two-wavelength, coefficient-two-wavelength, three wavelength and 1st ~ 4th derivatives.
- **Kinetic measurement can monitor the changes of absorbance and transmittance against time course at 10 different wavelengths. This module allows flexibility in manipulation and data display.**
- **With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports. Also offered are filing functions, display functions, and others (such as auto file and repeat measure/scan etc.).**
- **Performance—Perfectly designed high-performance spectrophotometer.**
- **Light Source: Socket deuterium lamp and socket tungsten halogen lamp for easy replacement**
- **Detector: Photomultiplier tube**
- **Sample Chamber: With accessories like reflectance sample holder and an integrating sphere.**
- **Size: 587mm x 563 mm x 260 mm**
- **Weight: 34 kg.**

Included Accessories

- 4 Optical Glass Cells 10mm.
- 2 Quartz Cells 10mm.
- 1 Dust cover
- 1 Instruction manual
- 1 Power cable
- 1 PC cable
- 1 Software CD for Windows 98/2000/XP
- 1 Software Operation Manual
- 1 Spare Tungsten Halogen Lamp
- 1 Block Light Cell
- 1 Extra fuse

Optional Accessories

- Set of 2 performance testing filters (1 "E filter" for photometric accuracy test and 1 didymium filter for wavelength accuracy test)
- Peltier constant temperature system
- 1 Spare Light Source for Spectro UV-Vis Double PC 8 Auto Cell
- 1 Block Light Cell
- 1 Extra fuse

Positioning

- CCD Cameras · Imaging
- Lasers · Light Sources
- Semiconductors · Detection · Sensors
- Components · Mechanics · Positioning
- Components · Mechanic · Positioning
# Technical Specifications

## 1) Optical System
- **Double Beam**
- **Wavelength range**: 190 nm – 900 nm
- **Spectral bandwidth**: 0.1, 0.2, 0.5nm, 1.0nm, 2.0nm, and 5.0 nm.
- **Stray Light**: > 0.01%T
- **Wavelength accuracy**: ±0.3 nm (automatic correction)
- **Wavelength Reproducibility**: 0.1 nm

## 2) Photometric System
- **Double Beam Ratio Recording System**
- **Optical System**: The monochromator of Czerny-Turner configuration with high-resolution diffraction holographic grating.
- **Photometric Method**: Transmittance, absorbance, reflectance, energy, concentration.
- **Photometric Range**: -4.0 ~ 4.0 Abs
- **Photometric Accuracy**: 0.3%T 0.300%T
- **Photometric Reproducibility**: 0.001Abs(0~0.5 Abs) 0.001Abs(0.5~1.0 Abs) 0.15%T (0~100%T).
- **Baseline flatness**: ±0.001Abs
- **Resolution**: 0.1nm (UVD-3500)
- **Baseline stability**: 0.0004Abs/h (@ 500nm, after preheating)
- **Absorbance Range**: -9.999 to 9.999 ABS
- **Continuous variable spectral bandwidth from**: 0.1, 0.2, 0.5, 1.0, 2.0 and 5.0 nm.
- **Scanning Speed**: 1000 nm/min
- **Interface Card**: PC Compatible
- **Detector**: Hi sensivity RS28 multiplier detector.
- **Photometric Display**: Unlimited
- **Photometric Noise**: <0.0003 Abs (500nm, 0Abs, 2nm Bandwith)
- **Slew rate of wavelength**: 2400nm/min

## 3) DNA/RNA Measurement
- **2400nm/min**
- **Photometric Noise**: <±0.0003 Abs (500nm, 0Abs, 2nm Bandwith)
- **Photometric Display**: Unlimited
- **Photometric Range**: -4.0 ~ 4.0 Abs
- **Photometric Accuracy**: 0.3%T 0.300%T
- **Photometric Reproducibility**: 0.001Abs(0~0.5 Abs) 0.001Abs(0.5~1.0 Abs) 0.15%T (0~100%T).
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- **Slew rate of wavelength**: 2400nm/min

## 4) Mainframe
- **Compact and standalone spectrophotometer mainframe**
- **Light Source**: Socket Deuterium Lamp and Socket Tungsten Halogen Lamp.
- **Sample Chamber**: With accessories like two-cell sample holder and optional integrating sphere.
- **Size**: 587mm. x 562mm. x 260mm.
- **Weight**: 34 Kg.

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**Spectro UV-Vis Double PC 8 Auto Cell**

**Scanning Spectrophotometer UV-VIS Double Beam**

**Model UVD-3000 and Model UVD-3200**

Spectro UV-Vis Double PC 8 Auto Cell is a high performance UV-Vis double beam automatic scanning spectrophotometer. Spectro UV-Vis Double has a brand new optical system design, microcomputer controlled. It is capable of processing data, from analytical and spectrum testing. Precise with high accuracy of measurement and stability are also provided by the powerful built in software and large LCD screen, which can display the screen menu and other functions. It can also be linked to a computer and a printer to show Photometric and Spectral data in the PC monitor. The Monochromator is Holographic grating 1200 line mirror.

Spectro UV-Vis Double PC 8 Auto Cell can perform automatic photometry scanning of the spectrums being measured, adding the possibility of quantitative analysis and kinetic spectrophotometric analysis. Both sample and reference beams are provided with the same sampling space, facilitating wider and longer scan of data with a more detailed view of the results in an easy to use environment.

Spectro UV-Vis Double PC 8 Auto Cell can be used extensively for qualitative and quantitative analysis in such fields as Pharmaceutical inspection, clinical analysis, chemistry and biochemistry labs, as well as in quality control departments, environmental control, water management, food processing, Petrochemistry, agriculture and DNA/RND measurement.

This Spectro can be used by itself or linked to a PC.

There are 2 models of Spectro UV-Vis Double PC 8 Auto Cell available:

1) Spectro UV-Vis Double PC 8 Auto Cell with fixed bandwidth of 2 nm. (Model UVD-3000)

2) Spectro UV-Vis Double PC 8 Auto Cell with variable bandwidth of 0.5, 1.0, 2.0 and 5.0 nm. (Model UVD-3200)

**Features**

- **Baseline Stability**: The Double beam monitoring ratio system enhances baseline stability.
- **Excellent Resolution**: The big-caliber light path enhances the instrument's energy, reduces its noise and raises its resolution performance.
- **Automatic successive measurement**: The automatic eight-cell sample holder offers the automatic measurement of eight samples in succession. So it can bring about one-touch measurement of the solution of six samples and a blank.
- **User-friendly light source**: The socket deuterium lamps and tungsten lamps facilitate light source replacement, simplify maintenance and reduce operation error.
- **Convenient Display**: The large backlit LCD screen displays both photometric values and spectral curves.
- **Full use of Computer Technology**: Being computer controlled with RS-232 interface and working on the Windows platform with the UV/Win application software.
- **Spectro UV-Vis Double PC 8 Auto Cell can be used extensively for qualitative and quantitative analysis in such fields as Pharmaceutical inspection, clinical analysis, chemistry and biochemistry labs, as well as in quality control departments, environmental control, water management, food processing, Petrochemistry, agriculture and DNA/RND measurement**.

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This Spectro can be used by itself or linked to a PC.
Software Specifications

Monoprocessor Built-in Application:

- **Photometric Measurement:**
  Measuring transmittance or absorbance at the current wavelength together with K factor calculations.
- **Spectrum Scan:**
  Carrying out scanning of transmittance or absorbance on the selected wavelength range together with peak-pick module.
- **Quantitative Determination:**
  Regression of standard curves and direct determination concentration of samples.

PC Windows Application Software (RS-232 Interface) to link Spectro to computer and printer:

- **Photometric Measurement:**
  Measuring the photometric values at 1-10 wavelengths together with mathematical calculations according to entered quotations.
- **Spectrum Scan:**
  Producing Wavelength scans within the operating parameters on samples together with powerful data handling facilities.
- **Quantitative Determination:**
  Determination of unknown concentration with methods of 1-3 wavelength quantitation, together with fitting of calibration curve of 1st ~ 4th order.
- **Kinetics:**
  Recording curves of changing photometric values of samples against timecourse at the selected wavelengths together with powerful data handling facilities.
- **Output:**
  With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports.

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4) **Mainframe**
- Compact and standalone spectrophotometer mainframe

**Light Source**
- Socket Deuterium Lamp and Socket Tungsten Halogen Lamp.

**Detector**
- Double Beam

**Sample Chamber**
- 2 cell holder

**Display**
- Liquid Crystal Display (LCD 320 x 240 dot matrix)

**Keypad**
- Touch soft keys.

**PC Interface: PC Interface**
- RS-232

**Size**
- 22x16x10" |

**Weight**
- 55 Lb
Spectro UV-VIS Double Beam PC Scanning Spectrophotometer

Model UVD-2960

Spectro UV-Vis Double PC (Model UVD-2960) is a high performance UV-Vis double beam automatic scanning spectrophotometer. It is a two (2) cell spectrophotometer with a variable bandwidth of 0.5, 1.0, 2.0 and 5.0.

Model UVD-2960 spectrophotometer offers high performance, ease of use and reliability, which can be used in various applications. Spectrophotometer Model UVD-2960 can be used extensively for qualitative and quantitative analysis in such fields as pharmaceutical inspection, clinical analysis, petro-chemistry laboratories, chemistry and biochemistry laboratories, DNA/RNA analysis as well as in quality control departments, i.e. environmental control, water management, food processing, and agriculture.

Spectro UV-Vis Double PC (Model UVD-2960) utilizes a new optical system design and is microcomputer controlled. With its focused-beam design, the system provides optimal and reproducible results for small samples. The sample beam and the reference beam are provided within the same sampling space which in turn facilitates wider and longer scan of data providing a more detailed view of the results in an easy to use environment. This instrument has excellent baseline stability and high resolution and permits scanning, quantitative analysis, kinetic spectrophotometric analysis and DNA/RNA analysis through PC control. This product is capable of processing data, from analytical and spectrum testing.

Spectro UV-Vis Double PC (Model UVD-2960) has a large LCD screen which displays the menu screen and of course makes the device user friendly. Additionally, this instrument has a powerful built-in software which permits the apparatus to be linked to a computer and a printer to display the photometric and spectral data on the PC monitor.

Labomed, Inc. is certified by ISO 9001-2000, has CE Conformity and is FDA Licensed. Spectro UV-Vis Double PC (Model UVD-2960) with variable bandwidth of 0.5, 1.0, 2.0 and 5.0 nm is a high-performance, reliable, and exceptional value instrument which is the hallmark of Labomed UV-Vis spectrophotometers.

Labomed, Inc. is certified by ISO 9001-2000, has CE Conformity and is FDA Licensed.

Features

- Baseline Stability: The Double beam monitoring ratio system enhances baseline stability.
- Excellent Resolution: The big-caliber light path enhances the instrument's energy, reduces its noise and raises its resolution performance.
- 2 Cell Holder: Spectro UVD-2960 has 2 cell holder for reference (standard) and sample.
- User-friendly light source: The socket deuterium lamps and tungsten lamps facilitate light source replacement, simplify maintenance and reduce operation error.
- Convenient Display: The large backlight LCD screen displays both photometric values and spectral curves.
- Full use of Computer Technology: Being computer controlled with RS-232 interface and working on the Windows platform with the UVWin application software.
- The key components adopt all from the world famous manufacturer, such as deuterium lamp, silicon photodiode and holographic grating, which ensures the stabilization and credibility of the instrument for extended life.
- Computer System is optional (NOT INCLUDED).

Software Specifications

The windows software

- Photometric Measurement: Measuring transmittance or absorbance at the current wavelength together with K factor calculations.
- Spectrum Scan: Carrying out scanning of transmittance or absorbance on the selected wavelength range together with peak-peak module.
- Quantitative Determination: Regression of standard curves and direct determination concentration of samples.

PC Windows Application Software (RS-232 Interface) to link Spectro to computer and printer:

- Photometric Measurement: Measuring the photometric values at 1-10 wavelengths together with mathematical calculations according to entered quotations.
- Spectrum Scan: Producing Wavelength scans within the operating parameters on samples together with powerful data handling facilities.
- Quantitative Determination: Determination of unknown concentration with methods of 1-3 wavelength quantitation, together with fitting of calibration curve of 1st ~ 4th order.
- Kinetics: Recording curves of changing photometric values of samples against timecourse at the selected wavelengths together with powerful data handling facilities.
- Output: With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports.

Included Accessories

- 2 Cell Holder
- 4 Optical Glass Cells 10mm.
- 2 Quartz Cells 10mm.
- 1 Dust cover
- 1 Instruction manual
- 1 Power cable
- 1 PC cable
- 1 Software CD for Windows 98/2000/XP
- 1 Software Operation Manual
- 1 Spare Tungsten Halogen Lamp
- 1 Block Light Cell
- 1 Extra fuse
- Optional: Peltier Kinetic Test System
- Optional: Sipper Flow Through System

Optional Accessories

- Set of 2 performance testing filters (1 "E filter" for photometric accuracy test and 1 didymium filter for wavelength accuracy test)
- Peltier constant temperature system (15 - 55 ºC Specify: Spectro UV-Vis Double)
- Sipper flow through system (peristaltic pump and flow cell Specify: Spectro UV-Vis Double)
- Multi-purpose cell holder 20-30-40-50 Path Length

Labomed, Inc. is certified by ISO 9001-2000, has CE Conformity and is FDA Licensed.
Technical Specifications

1) Wavelength range | 190 nm – 1100 nm
Spectral bandwidth | 0.5, 1.0, 2.0 and 5.0 nm
Resolution | 0.5nm
Stray Light | <0.1%T (220 nm, NaI; 340 NaNO2), >2.0Abs (KCl, 200nm)
Wavelength accuracy | ±0.3nm
Wavelength Reproducibility | 0.2nm

2) Photometric System
The double-beam monitoring ratio system.

Photometric Method | Transmittance, absorbance, energy and concentration
Photometric Range | -0.3~3.0 Abs
Photometric Accuracy | ±0.002Abs (0~0.5A)
                   | ±0.004Abs (0.5~1A)
                   | ±0.3%T (0~100%T)
Photom. Reproducibility | 0.001Abs (0.5~0.9A)
                       | 0.002Abs (0.5~1A)
                       | 0.15%T (0~100%T)
Photometric Display | -9999 - 9999
Photometric Noise | ±0.001Abs (500nm, 0Abs 2mm Spectral Bandwidth).
Scanning Speed | 1400nm/min
Baseline flatness | ±0.0015 Abs (190-1100nm)
Baseline stability | 0.0008Abs/h (500nm, 0Abs 2mm Spectral Bandwidth, 2Hr. warm-up)
Slew rate of wavelength | 3600nm/min
3) DNA/RND Measurement
Results Printout | Printing of measured data by using any Printer with Parallel Port connection available.

4) Mainframe
Compact and standalone spectrophotometer mainframe

Light Source
Socket Deuterium Lamp and Socket Tungsten Halogen Lamp.

Detector | Double Beam
Sample Chamber | 2 cell holder
Display | Liquid Crystal Display (LCD 320 x 240 dot matrix)
Keypad | Touch soft keys.
PC Interface: PC Interface | RS-232
Size | 22x16x10”
Weight | 55 Lb

Spectro UV-VIS Double Beam PC Scanning Spectrophotometer

Model UVD-2950
Spectro UV-VIS Double Beam PC (Model UVD-2950) is a high performance UV-Vis double beam automatic scanning spectrophotometer. It is a two (2) cell spectrophotometer, now with a new and improved bandwidth of 1nm! Model UVD-2950 spectrophotometer offers high performance, ease of use and reliability, which can be used in various applications. Spectrophotometer Model UVD-2950 can be used extensively for qualitative and quantitative analysis in such fields as pharmaceutical inspection, clinical analysis, petro-chemistry laboratories, chemistry and biochemistry laboratories, DNA/RNA analysis as well as in quality control departments, i.e. environmental control, water management, food processing, and agriculture.

Spectro UV-VIS Double Beam PC (Model UVD-2950) utilizes a new optical system design and is microcomputer controlled. With its focused-beam design, the system provides optimal and reproducible results for small samples. The sample beam and the reference beam are provided within the same sampling space which in turn facilitates wider and longer scan of data providing a more detailed view of the results in an easy to use environment. This instrument has excellent baseline stability and high resolution and permits scanning, quantitative analysis, kinetic spectrophotometric analysis and DNA/RNA analysis through PC control. This product is capable of processing data, from analytical and spectrum testing.

Spectro UV-VIS Double Beam PC (Model UVD-2950) has a large LCD screen which displays the menu screen and of course makes the device user friendly. Additionally, this instrument has a powerful built-in software which permits the apparatus to be linked to a computer and a printer to display the photometric and spectral data on the PC monitor.

Labomed, Inc. is certified by ISO 9001-2000, has CE Conformity and is FDA Licensed. Spectro UV-VIS Double Beam PC (Model UVD-2950) with fixed bandwidth of 1 nm is a high-performance, reliable, and exceptional value instrument which is the hallmark of Labomed UV-Vis spectrophotometers.

This Spectro can be used by itself or linked to a PC.

Labomed, Inc. is certified by ISO 9001-2000, has CE Conformity and is FDA Licensed.

Features
- **Baseline Stability:** The Double beam monitoring ratio system enhances baseline stability.
- **1nm fixed bandwidth New!:** The Double beam monitoring ratio system enhances baseline stability.
- **Excellent Resolution:** The big-caliber light path enhances the instrument's energy, reduces its noise and raises its resolution performance.
- **2 Cell Holder:** Spectro UVD-2950 has 2 cell holder for reference (standard) and sample.
- **User-friendly light source:** The socket deuterium lamps and tungsten lamps facilitate light source replacement, simplify maintenance and reduce operation error.
- **Convenient Display:** The large backlit LCD screen displays both photometric values and spectral curves.
- **Full use of Computer Technology:** Being computer controlled with RS-232 interface and working on the Windows platform with the UVWin application software.
- **The key components adopt all from the world famous manufacturer, such as deuterium lamp, silicon photodiode and holographic grating, which ensures the stabilization and credibility of the instrument for extended life.**
- **Computer System is optional (NOT INCLUDED).**
Software Specifications

Monoprocessor Built-in Application:

- **Photometric Measurement:** Measuring transmittance or absorbance at the current wavelength together with K factor calculations.
- **Spectrum Scan:** Carrying out scanning of transmittance or absorbance on the selected wavelength range together with peak-pick module.
- **Quantitative Determination:** Regression of standard curves and direct determination concentration of samples.

PC Windows Application Software (RS-232 Interface) to link Spectro to computer and printer:

- **Photometric Measurement:** Measuring the photometric values at 1-10 wavelengths together with mathematical calculations according to entered quotations.
- **Spectrum Scan:** Producing Wavelength scans within the operating parameters on samples together with powerful data handling facilities.
- **Quantitative Determination:** Determination of unknown concentration with methods of 1-3 wavelength quantitation, together with fitting of calibration curve of 1st ~ 4th order.
- **Kinetics:** Recording curves of changing photometric values of samples against timecourse at the selected wavelengths together with powerful data handling facilities.
- **Output:** With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports.

Accessories:

- 2 Auto Cell Holder
- 4 Optical Glass Cells 10mm.
- 2 Quartz Cells 10mm.
- 1 Dust cover
- 1 Instruction manual
- 1 Power cable
- 1 PC cable
- 1 Software CD for Windows 98/2000/XP
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- Optional: Peltier Kinetic Test System
- Optional: Sipper Flow Through System

Optional Accessories:

- Set of 2 performance testing filters
  (1 "E filter" for photometric accuracy test and 1 didymium filter for wavelength accuracy test)
- Peltier constant temperature system (15 - 55 °C Specify: Spectro UV-Vis Double)
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- Multi-purpose cell holder 20-30-40-50 Path Length

Technical Specifications

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<td>Spectral bandwidth</td>
<td>1.0 nm. New and Improved!</td>
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<tr>
<td>Resolution</td>
<td>1 nm.</td>
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<td>Stray Light</td>
<td>&lt;0.1%T (220 nm, NaI; 340 NaNo2), &gt;=2.0Abs (KCl, 200nm)</td>
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<td>Wavelength accuracy</td>
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<td>0.2 nm</td>
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<td>±0.002Abs (0<del>0.5A) ±0.004Abs (0.5</del>1A) ±0.3%T (0~100%T)</td>
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<td>Slew rate of wavelength</td>
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<td>Results Printout</td>
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</tr>
<tr>
<td>PC Interface</td>
<td>PC Interface: RS-232</td>
</tr>
<tr>
<td>Size</td>
<td>22x16x10”</td>
</tr>
<tr>
<td>Weight</td>
<td>55 Lb</td>
</tr>
</tbody>
</table>
Spectro UV-Vis Dual Beam PC

Scanning Spectrophotometer UV-VIS Split Beam 8 Auto Cell

Model UVS-2700 & UVS-2800

Spectro UV-Vis Split Beam PC is a precise scanning Spectrophotometer with a new design of 8 microprocessor automatic 2 row cell holder that moves noiseless with a special membrane. This Split Beam Spectro has a dual detector and a very accurate system.

Spectro UV-Vis Split Beam PCs microcomputer-controlled and has a large LCD display to work independently. It can also be linked to a computer and a printer to show Photometric and Spectral data in the PC monitor. This connection is controlled by the RS232 interface, compatible with Windows Platforms, and the provided UV-VIS application software.

Spectro UV-Vis Split Beam PC is also capable of performing kinetic test by an optional Peltier constant temperature system, and can test flow through liquid by the optional Slipper Flow Through System.

Spectro UV-Vis Split Beam PC can be used as an accurate system for qualitative and quantitative analysis of analytical test, Biochemistry, Chemistry, Clinical Analysis, Pharmaceutique and Agriculture Labs, Quality control, Industry and research.

Spectro UV-Vis Split Beam PC can perform DNA/RNA measurement, that can also be printed using an external HP 600/800 series printer.

There are 2 models of Spectro UV-Vis Split Beam PC available:
1) Spectro UV-Vis Split Beam PC with fixed bandwidth of 2 nm (UVS-2700).
2) Spectro UV-Vis Split Beam PC with variable bandwidth of 0.5, 1.0, 2.0 and 5.0 nm.
(UVS-2800) is also available.

This Spectro can be used by itself or linked to a PC.

Features

- **Baseline Stability:**
  The Split-beam monitoring ratio system enhances baseline stability.

- **Excellent Resolution:**
  The big-caliber light path enhances the instrument's energy, reduces its noise and raises its resolution performance.

- **Automatic successive measurement:**
  The automatic eight-cell sample holder offers the automatic measurement of eight samples in succession. So it can bring about one-touch measurement of the solution of seven samples and a blank.

- **User-friendly light source:**
  The socket deuterium lamps and tungsten lamps facilitate light source replacement, simplify maintenance and reduce operation error.

- **Convenient Display:**
  The large backlit LCD screen displays both photometric values and spectral curves.

- **Full use of Computer Technology:**
  Being computer controlled with RS-232 interface and working on the Windows platform with the UV/Win application software, presents to the fullest of the fascination of modern computer technology.

- **The key components:**
  adopts from the world famous manufacturer, such as deuterium lamp, silicon photodiode and holographic grating, which ensures the stabilization and credibility of the Instrument for extended life.

- **Computer System is optional (NOT INCLUDED).**

Functions

- **Photometric Measurement:**
  Rapid and accurate measurements of transmittance and absorbance for samples and selected wavelength are available. This module allows successive and automatic calibration and measurement of up to seven samples with the built-in 8-cell sample holder. Direct concentration results can be produced by simply entering the K-factor. Printout of Measured data with sample numbers in a tabular format.

- **Spectrum Scan:**
  Spectra of samples on any range between 1100nm ~ 190 nm can be measured with real time visual display of spectral curves on the large LCD screen. Such operating parameters can be selected, as photometric mode, wavelength range, ordinate range, sampling interval and scanning speed. Picking out and printout of peaks and valleys for spectral curves. Printout of spectral curves to a printer with A4 paper.

- **Quantitative Measurement:**
  Use a calibration curve to determine the concentration of unknowns at the user-selected wavelength. The regression of calibration curve can be made with up to 8 standards and the linear correlation coefficients be offered. The plot of a calibration curve is displayed on the large LCD screen. Instant concentration results can be produced by simply entering K-factors. Successive and automatic calibration and concentration measurement up to seven samples are available by the built-in 8 cell sample holder. Printout of the table of measured concentrations and K-factors of a calibration curve.

- **Windows Software:**
  Such operations as photometry measurement, spectrum measurement, quantitation measurement and kinetic measurement are offered in the UV-Win Windows application. Up to 10 Spectra and time-course curves can be measured and recalled in memory with data-handling of arithmetical calculation, logarithmic calculation, reciprocal calculation, smooth, derivative (1t-4th), Abs to/%T conversion and peak pick.
  Up to 24 standards can be entered and measured for fitting of calibration curve with order of 1st – 4th. With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports.

- **Software specifications**

  MONOPROCESSOR BUILT- IN APPLICATION

  - Photometric Measurement: Measuring transmittance or absorbance at the current wavelength together with K factor calculations.
  - Spectrum Scan: Carrying out scanning of transmittance or absorbance on the selected wavelength range together with peak-pick module.
  - Quantitative Determination: Regression of standard curves and direct determination concentration of samples.

  PC WINDOWS APPLICATION SOFTWARE (RS-232 INTERFACE)

  - Photometric Measurement: Measuring the photometric values at 1-10 wavelengths together with mathematical calculations according to entered quotations.
  - Spectrum Scan: Producing Wavelength scans within the operating parameters on samples together with powerful data handling facilities.
  - Quantitative Determination: Determination of unknown concentration with methods of 1-3 wavelength quantification, together with fitting of calibration curve of 1st ~ 4th order.
  - Kinetics: Recording curves of changing photometric values of samples against timecourse at the selected wavelengths together with powerful data handling facilities.
  - Output: With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports.
UV-VIS Scanning Spectrophotometer With 8 Auto Cell Holder

Spectro UV-2650

Spectro UV-2650 is an all-purpose UV-VIS scanning spectrophotometer with scan function. It is widely used in medicine, environmental monitoring, commodity inspection, food inspection, agricultural chemistry, teaching in colleges and universities, metallurgy, geology, machine manufacturing, and petrochemical industries, and is a helpful tool for analysts to carry out qualitative and quantitative analysis of materials.

Labomed, Inc. is certified by ISO 9001-2000, has CE Conformity and is FDA Licensed

Features

- Fully automated operations: automatic change-over between W lamp and D2 lamp; automatic filter changing; automatic wavelength calibration; W lamp and D2 lamp On/Off auto-control; automatic zero and 100%T adjustment.
- Automatic peak-picking; easy operations for replacing W lamp and D2 lamp.
- Friendly interface; abundant operation prompts; convenient and fast operations.
- Blue LCD display module with 320×240 large screen.
- Economical embedded single-chip micro-processor control system.
- Rich and powerful functions:
  - Five basic measurement modes: WL Scan (A, T, E), Photometric measurement (Fixed WL measurement, A, T), Quantitation (Concentration Measurement, A, C), Time Scan (Kinetics Measurement, A, T), Real Time Measurement (A, T, C, E);
  - Powerful spectrum processing functions:
    - Spectrum Save, Spectrum Load, Peak-Valley Pick, Derivative Spectrum, Data Printing at Intervals, Activity Calculation, Cursor locating, Spectrum Zooming, A-T Conversion, Spectrum Printing;
    - Data Processing functions:
      - data save, data looking up, data deleting and data printing, etc.
      - Cell error can be corrected;
      - Parameters can be saved for a long time after turning off the instrument;
      - Spectrum and data can be stored when sudden power failure occurs;
      - Spectrum and data can be sent to computer via RS-232 interface.

Technical Specifications

1) Optical System: Dual Beam
- Wavelength range: 190 nm – 1100 nm
- Spectral bandwidth: 2.0 nm (UVS-2700) and 0.5-1.0-2.0 and 5.0 nm (UVS-2800)
- Stray Light: <0.12%T (220 nm, NaI; 340 NaN02), >=2.0Abs (KCI, 200nm)
- Wavelength accuracy: ±0.3nm
- Wavelength Reproducibility: 0.2 nm

2) Photometric System
- The split-beam monitoring ratio system.
- Optical System: The crossed monochromator with the high-resolution, diffraction holographic grating.
- Photometric Method: Transmittance, absorbance, energy and concentration
- Photometric Range: -0.3~3.0 Abs
- Photometric Accuracy: ±0.002Abs (0~0.5A)
  ±0.004Abs (0.5~1A)
  ±0.3%T (0~100%T)
- Photometric Reproducibility: 0.001Abs (0~0.5A)
  0.002Abs (0.5~1A)
  0.15%T (0~100%T)
- Baseline flatness: ± 0.002 Abs (190-1100nm)
- Baseline stability: 0.001Abs/h (500nm, 0 Abs 2nm Spectral Bandwidth, 2Hr. warm-up)
- Scanning Speed: 1400nm/min.
- Interface Card: RS-232
- Detector: Dual Silicon photodiodes

3) DNA/RNA Measurement:
- Results Printout: Printing of measured data by using HP Deskjet 600/800 series (optional)

4) Mainframe
- Compact and standalone spectrophotometer mainframe
- Light Source: Socket Deuterium Lamp and Socket Tungsten Halogen Lamp.
- Detector: Dual Silicon photodiodes
- Sample Chamber: Automatic eight-cell sample holder.
- Size: 22x16x10"  
- Weight: 55 Lb.

Accessories

- 8 Auto Cell Holder
- 8 Optical Glass Cells 10mm.
- 2 Quartz Cells 10mm.
- 1 Dual cover
- 1 Instruction manual
- 1 Power cable
- 1 PC cable
- 1 Software CD for Windows 98/2000/XP
- 1 Software Operation Manual
- 1 Spare Tungsten Halogen Lamp
- 1 Block Light Cell
- 1 Extra fuse
- Optional: Peltier Kinetic Test System
- Optional: Sipper Flow Through System
Software Specifications

Such operations as photometry measurement, spectrum measurement, quantitation measurement and kinetic measurement are offered in UV-Win Windows applications.

Multi-wavelengths photometric measurement at up to 10 wavelengths with the arithmetic calculation according to the user-entered formula.

Up to 10 spectra and time-course curves can be measured and recalled in memory with data-handling of arithmetic calculation, logarithmic calculation, reciprocal calculation, smooth, derive (1st ~ 4th), Abs to/from %T conversion and peak pick.

Up to 24 standards can be entered and measured for the fit of calibration curve with order to 1st ~ 4th.

Kinetic measurement can monitor the changes of absorbance and transmittance against time course at 10 different wavelengths. This module allows flexibility in manipulation and data display.

With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports. Also offered are filing functions, display functions, and others (such as auto file and repeat measure/scan etc.).

Included Accessories
- 2 square quartz cells 10 mm with lid
- 4 square optical cells 10mm.
- Dust cover
- 1 Software
- 1 Instruction Manual
- 1 Power cable
- 1 PC cable

Optional Accessories
- Peltier Kinetic Test System
- Sipper Flow Through System

Technical Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range</td>
<td>190-1100 nm</td>
</tr>
<tr>
<td>Spectral Bandwidth</td>
<td>2nm</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>≤0.5nm</td>
</tr>
<tr>
<td>Wavelength Reproducibility</td>
<td>0.2nm</td>
</tr>
<tr>
<td>Photometric Accuracy</td>
<td>±0.5%T (0~100%)T</td>
</tr>
<tr>
<td></td>
<td>±0.002A (0~0.5A)</td>
</tr>
<tr>
<td></td>
<td>±0.004A (0.5A~1A)</td>
</tr>
<tr>
<td>Photometric Reproducibility</td>
<td>0.2%T</td>
</tr>
<tr>
<td>Working Mode</td>
<td>T.A.(-0.3-3%)C,E</td>
</tr>
<tr>
<td>Stray Light</td>
<td>≤0.1%T(NaI,220nm;NaNO2,340nm)</td>
</tr>
<tr>
<td>Baseline Flatness</td>
<td>±0.002A</td>
</tr>
<tr>
<td>Stability</td>
<td>≤0.002A/h (at 500nm, after warming up)</td>
</tr>
<tr>
<td>Noise</td>
<td>≤0.001A (at 500nm, after warming up)</td>
</tr>
<tr>
<td>Detector</td>
<td>Silicon Photo-diode</td>
</tr>
<tr>
<td>Display</td>
<td>6 inches high light blue LCD</td>
</tr>
<tr>
<td>Power</td>
<td>AC:220V/50Hz, 110V/60Hz,140W (Automatic)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>530x410x210mm</td>
</tr>
<tr>
<td>Net Weight</td>
<td>18Kg.</td>
</tr>
</tbody>
</table>

Spectro UV-VIS Auto Scanning Spectrophotometer

Model UV-2602 With 8 Auto Cell Holder

Spectro UV-VIS Auto UV-2602 is Labomed’s latest in single beam scanning UV-VIS Spectroscopy; with its seamless integration with any PC, which makes managing data exceptionally easy.

This spectrophotometer delivers enhanced ease-of-use, precision and accuracy resulting in time and cost savings, as well as unprecedented confidence in test results. Model UV-2602 works in the ultraviolet and visible range of 190-1100 nm and has a fixed bandwidth of 1.8 nm. Model UV-2602 spectrophotometer offers high performance and reliability, which can be used in various applications. Spectrophotometer Model UV-2602 can be used extensively for qualitative and quantitative analysis in such fields as clinical analysis, medical laboratories, DNA/RNA testing, petro-chemistry laboratories, pharmacy and biochemistry laboratories, educational labs, research laboratories, analytical laboratories, as well as in quality control departments, i.e., environmental control, water management, food processing, and agriculture.

Spectro UV-VIS Auto UV-2602 is also capable of performing kinetic test through the use of an optional Peltier Constant Temperature System. Model UV-2602 has excellent baseline stability and high resolution. This spectrophotometer has eight (8) automatic cell holders to test eight (8) samples simultaneously.

Spectro UV-VIS Auto UV-2602 has a powerful built-in software which permits the instrument to be linked to a computer and a printer to display the photometric and spectral data on the PC monitor. The RS-232C interface, the port, and the included UV-VIS software link the spectrophotometer and the PC, which are compatible with Windows Platforms (Windows 98, 2000, and XP). The advanced 2-way communication system allows the user to provide instructions right from the computer and gives the user the ability to print and record results in an easy to use interface. In addition to saving data, the Spectro’s software can save parameters, set wavelengths and allow automatic processing of concentration.

This Spectro can be used by itself or linked to a PC.

Features

- Automatic 8 Cell holder by microprocessor.
- Auto A/T/C.
- Auto Zero.
- Auto Wavelength.
- Auto Scanning by PC.
- Auto Switching Deuterium and Tungsten lamps.
- 2 way computer communication.
- RS 232 computer interface.
- 2 nm bandwidth.
- Wide continuous wavelength.
- Easy to change lamp.
- USA/FDA licensed.
- Computer System is optional (NOT INCLUDED).
Software Specifications

The windows software

- Such operations as photometry measurement, spectrum measurement, quantitation measurement and kinetic measurement are offered in UV-Win Windows applications.
- Multi-wavelengths photometric measurement at up to 10 wavelengths with the arithmetic calculation according to the user-entered formula.
- Up to 10 spectra and time-course curves can be measured and recalled in memory with data-handling of arithmetic calculation, logarithmic calculation, reciprocal calculation, smooth, derivate (1st ~ 4th), abs to/ from %T conversion and peak pick.
- Up to 24 standards can be entered and measured for the fit of calibration curve with order to 1st ~ 4th. Offered are the quantitation methods of single wavelength, two-wavelength, coefficient two-wavelength, three wavelength and 1st ~ 4th derivatives.
- Kinetic measurement can monitor the changes of absorbance and transmittance against time course at 10 different wavelengths. This module allows flexibility in manipulation and data display.
- With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports. Also offered are filing functions, display functions, and others (such as auto file and repeat measure/scan etc.).
- Light Source: Socket deuterium lamp an socket tungsten halogen lamp for easy replacement
- Detector: Photomultiplier tube
- Sample Chamber: With accessories like four-cell sample holder and an integrating sphere.
  Size: 587 mm x 583 mm x 260 mm
  Weight: 34 kg.

Included Accessories

- 8 square optical cells 10mm.
- 2 square quartz cells 10 mm with lid.
- Dust cover.
- Spectro Software Win98/2000/XP Compatible
- Instruction manual
- Software Operation Manual
- Power cable
- PC cable
- Peltier constant temperature control system (37 - 57°C)

Optional Accessories

- 8 square optical cells 10mm.
- 2 square quartz cells 10 mm with lid.
- Dust cover.
- Spectro Software Win98/2000/XP Compatible
- Instruction manual
- Software Operation Manual
- Power cable
- PC cable
- Peltier constant temperature control system (37 - 57°C)

Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range</td>
<td>190 to 1100 nm.</td>
</tr>
<tr>
<td>Wavelength accuracy</td>
<td>±0.5 nm.</td>
</tr>
<tr>
<td>Wavelength Repeatability</td>
<td>±0.2 nm.</td>
</tr>
<tr>
<td>Spectral Bandwidth</td>
<td>1.8 nm</td>
</tr>
<tr>
<td>Straylight</td>
<td>0.3% T. (220nm, 340nm, NaI)</td>
</tr>
<tr>
<td>Transmittance Range</td>
<td>0.0~200.0% T.</td>
</tr>
<tr>
<td>Absorbance Range</td>
<td>-0.301~4.000A.</td>
</tr>
<tr>
<td>Concentration Range</td>
<td>0~9999C.</td>
</tr>
<tr>
<td>Transmittance accuracy</td>
<td>±0.5% T.</td>
</tr>
<tr>
<td>Transmittance repeatability</td>
<td>±0.2% T.</td>
</tr>
<tr>
<td>Baseline Flatness</td>
<td>±0.005A</td>
</tr>
<tr>
<td>Noise</td>
<td>100% noise 0.3% T. 0% noise 0.2% T.</td>
</tr>
<tr>
<td>Stability</td>
<td>±0.005A/h (at 500nm)</td>
</tr>
<tr>
<td>Light Source</td>
<td>2000hr. Tungsten, Halogen and Deuterium Lamp.</td>
</tr>
<tr>
<td>Detector</td>
<td>Optical Cells Photodiode</td>
</tr>
<tr>
<td>Scanning speed</td>
<td>Fast, medium and slow.</td>
</tr>
<tr>
<td>Power</td>
<td>AC220V/110V±10%, 50/60Hz±1Hz</td>
</tr>
<tr>
<td>Software</td>
<td>Labomed Inc. Software (Included), for Windows: 98, 2000 and XP.</td>
</tr>
<tr>
<td>Computer Interface</td>
<td>RS 232</td>
</tr>
<tr>
<td>Cell holder</td>
<td>Automatic 8 cell holder.</td>
</tr>
<tr>
<td>Display</td>
<td>LCD.</td>
</tr>
<tr>
<td>Keypad</td>
<td>Soft key.</td>
</tr>
<tr>
<td>Printer</td>
<td>External (Optional).</td>
</tr>
</tbody>
</table>
UV-VIS Spectrophotometer with 4 Cell Holder

Spectro UV-2550

Spectro UV-2550 is a traditional analytical device used in conventional laboratories. This spectrophotometer delivers enhanced user-friendliness, precision, and accuracy resulting in time and cost savings, as well as unprecedented confidence in test results. Spectro UV-2550 works in the ultraviolet and visible range of 190-1100 nm and has a fixed bandwidth of 4 nm. Spectro UV-2550 offers high performance and reliability, which can be used in various applications. Spectro UV-2550 can be used extensively for qualitative and quantitative analysis in such fields as clinical analysis, petro-chemistry laboratories, chemistry and biochemistry laboratories, as well as in quality control departments, i.e. environmental control, water management, food processing, and agriculture.

Spectro UV-2550 is equipped with the RS-232C interface and port. Spectro UV-2550 can be linked to a computer, which is compatible with Windows Platforms, and a printer to display the photometric and spectral data on the PC monitor. UV-VIS Spectro UV-2550 utilizes a new optical system design and is microcomputer controlled. This instrument has soft keys for ease of use. Spectro UV-2550 has excellent baseline stability and high resolution.

Spectro UV-2550 consists of a light source (Tungsten Halogen and Deuterium lamp) which switches mode automatically, monochromator, Silicon photodiode, logarithmic amplifier, digital volt meter, D.C. stabilizer, and microprocessor. This new generation instrument is equipped with a microprocessor to automatically adjust 100 % T and Zero ABS, Factor, and Concentration. Spectro UV-VIS RS operates with a single beam system controlled. This instrument has soft keys for ease of use. Spectro UV-2550 has a four digit display for automatic calculation and direct readout of (T)ransmittance, (A)bsorbption, and (C)oncentration.

One of the most important features of the new Spectro UV-2550 is that the light will change automatically from Visible to UV as needed.

Features
- This instrument is the realization of a long history of specialized research, design, and manufacture. It is simple in construction and high in performance. The multiple cell holder is one of the unique features of the Spectro UV-2550. It is able to test, record and print four sample results immediately by built in interface RS 232C. The Spectro may save the reagents and samples by using the optional semi-micro cuvette of 1.5 ml or less to reduce waste. This unit was constructed with high reliability, durability, ease of operation, and maintenance in mind.
- Microprocessor control, 16x2 LCD display.
- Auto zero and auto 100% T adjustment provided.
- Calibration curve can be set up by either measuring or entering up to 10 standards or entering K and B factors directly via the keyboard.
- Data can be printed on an optional desktop printer and can be downloaded to a PC through RS-232.
- Up to 10 calibration curves can be stored and edited for user’s convenience.
- Auto-wavelength control (optional).
- PC Control provided for more accurate and flexible measurement requirements (optional).
- Power source automatic for both 110V. and 220V., 50/60Hz.

Software Specifications
- Monoprocessor Built-in Application:
  - Photometric Measurement: Measuring transmittance or absorbance at the current wavelength together with K factor calculations.
  - Spectrum Scan: Carrying out scanning of transmittance or absorbance on the selected wavelength range together with peak-pick module.
  - Quantitative Determination: Regression of standard curves and direct determination concentration of samples.

PC Windows Application Software (RS-232 Interface) to link Spectro to computer and printer:
- Photometric Measurement: Measuring the photometric values at 1-10 wavelengths together with mathematical calculations according to entered quotations.
- Spectrum Scan: Producing Wavelength scans within the operating parameters on samples together with powerful data handling facilities.
- Quantitative Determination: Determination of unknown concentration with methods of 1-3 wavelength quantitation, together with fitting of calibration curve of 1st ~ 4th order.
- Kinetics: Recording curves of changing photometric values of samples against timecourse at the selected wavelengths together with powerful data handling facilities.
- Output: With the Windows clipboard, the measured data and graphics can be copied to other applications software for reports.

Included Accessories
- 4 square optical cells 10 mm.
- 2 square quartz cells 10 mm.
- 1 multiple cell holder.
- 1 Software
- 1 Software Manual
- 1 Operation Manual
- 1 Power cable
- 1 Software Cable

Optional Accessories
- Constant Temperature
- Flow Through System
- Large Cell 20-30-40-50 and 100 mm.
- Multi purpose cell holder for long path cells, 20 - 50mm path length (Specify: Spectro UV-Vis Double PC 8 Auto Cell)
Spectro UV-VIS RS

Technical Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength Range</td>
<td>190-1100nm (D2 lamp: 190nm-350nm, tungsten lamp: 350nm-1100nm)</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>±2.0</td>
</tr>
<tr>
<td>Photometric Reproducibility</td>
<td>≤ 1nm</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>±2 nm</td>
</tr>
<tr>
<td>Wavelength Reproducibility</td>
<td>≤1nm</td>
</tr>
<tr>
<td>Photometric Accuracy</td>
<td>±0.5% T</td>
</tr>
<tr>
<td>Photometric Repeatability</td>
<td>≤0.3% T</td>
</tr>
<tr>
<td>Spectral Bandwidth</td>
<td>4nm</td>
</tr>
<tr>
<td>Stability</td>
<td>100% T: 0.5 % T/3min. 0%T: 0.3% T/3min.</td>
</tr>
<tr>
<td>Optical System</td>
<td>Plane grating as the dispersing element, 1200 L/mm</td>
</tr>
<tr>
<td>Dimensions</td>
<td>527×435×215 mm</td>
</tr>
<tr>
<td>Net Weight</td>
<td>17 Kg</td>
</tr>
<tr>
<td>Light Source</td>
<td>Tungsten halogen lamp, D2 lamp</td>
</tr>
<tr>
<td>Power Requirement</td>
<td>220/110 V + 10% 50/60 HZ (Automatic)</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>120W</td>
</tr>
</tbody>
</table>

Spectro UV-2502 is an advanced generation improved Spectro UV-2500 with a new bandwidth of 2nm.

Spectro UV-2502 is a traditional analytical device used in conventional laboratories. This spectrophotometer delivers enhanced user-friendliness, precision and accuracy resulting in time and cost savings, as well as unprecedented confidence in test results. Model UV-2502 works in the ultraviolet and visible range of 190-1100 nm and has a New and Improved 2nm Bandwidth! Model UV-2502 spectrophotometer offers high performance and reliability, which can be used in various applications. Spectrophotometer Model UV-2502 can be used extensively for qualitative and quantitative analysis in such fields as clinical analysis, petro-chemistry laboratories, chemistry and biochemistry laboratories, as well as in quality control departments, i.e. environmental control, water management, food processing, and agriculture.

Spectro UV-Vis RS (Model UV-2502) is equipped with the RS-232C interface and port which link the spectrophotometer and the PC using the UV-VIS software. Model UV-2502 can be linked to a computer, which is compatible with Windows Platforms, and a printer to display the photometric and spectral data on the PC monitor.

Spectro UV-VIS RS (Model UV-2502) utilizes a new optical system design and is microcomputer controlled. This instrument has soft keys for ease of use and may utilize 13 mm test tube. Model UV-2502 has excellent baseline stability and high resolution.

Spectro UV-VIS RS (Model UV-2502) consists of a light source (Tungsten Halogen and Deuterium lamp), monochromator, Silicon photodiode, logarithmic amplifier, digital volt meter, D.C. stabilizer, and microprocessor. This new generation instrument is equipped with a microprocessor to automatically adjust 100 % T and Zero ABS, Factor, and Concentration. Spectro UV-VIS 2502 operates with a single beam system and 1250 line grating mirror. Model UV-2502 has a four digit display for automatic calculation and direct readout of (T)ransmittance, (A)bsorbption, and (C)oncentration.

This Spectro can be used by itself or linked to a PC.

Features

This instrument is the realization of a long history of specialized research, design, and manufacture. It is simple in construction and high in performance. The multiple cell holder is one of the unique features of the Spectro UV-VIS 2502. It is able to test, record and print four sample results immediately by built in interface RS 232C. The Spectro may save the reagents and samples by using the optional semi-micro cuvette of 1.5 ml or less to reduce waste. This unit was constructed with high reliability, durability, ease of operation, and maintenance in mind.

- Easy to change light source.
- Very competitive price.
- Has FDA license.
- RS 232 computer interface.
- 2 nm bandwidth. NEW AND IMPROVED!
- Can use 13mm. test tube.
- Wide continuous wavelength.
- Easy to change lamp.
- Computer System is optional (NOT INCLUDED).
Included Accessories

- 4 square optical cells 10mm.
- 2 square quartz cells 10 mm.
- 1 multiple cell holder.
- Dust cover.
- Instruction manual.
- 1 power cable.

Optional Accessories

- Constant temperature system for kinetic testing: three water jacketed square cell holders and front panel. (Specify: Spectro UV-Vis RS)
- Flow through system (peristaltic pump and flowcell)
- Multi-purpose cell holder for long path (20 - 50mm) rectangular cells
- Holder for test tube cuvettes, 13mm diameter
- Set of 2 performance testing filters
  (1 “E filter” for photometric accuracy test and 1 didymium filter for wavelength accuracy test)
- Set of 2 filters with for accuracy test.
- RS232 interface cable
- Software for Windows 95/98/XP Included RS232C cable, operator's manual. (Specify: Spectro UV-Vis 2502)
- External printer (Attaches directly to the Spectro UV-2502)

Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical system</td>
<td>Single beam spectrophotometer.</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>2nm. NEW AND IMPROVED!</td>
</tr>
<tr>
<td>Wavelength range</td>
<td>190-1100 nm.</td>
</tr>
<tr>
<td>Light source</td>
<td>Tungsten Halogen and Deuterium lamp.</td>
</tr>
<tr>
<td>Detector</td>
<td>Silicon photodiode.</td>
</tr>
<tr>
<td>Wavelength accuracy</td>
<td>±2 nm.</td>
</tr>
<tr>
<td>Wavelength reproducibility</td>
<td>1 nm.</td>
</tr>
<tr>
<td>Spectral band pass</td>
<td>4nm.</td>
</tr>
<tr>
<td>Stray light</td>
<td>&lt; 0.5 % T (at 220 nm. 340nm)</td>
</tr>
<tr>
<td>Transmittance range</td>
<td>0-100% T.</td>
</tr>
<tr>
<td>Multi cell holder</td>
<td>4 cuvettes.</td>
</tr>
<tr>
<td>Absorption range</td>
<td>0-1.999 A.</td>
</tr>
<tr>
<td>Concentration range</td>
<td>0-1999.</td>
</tr>
<tr>
<td>Photometric accuracy</td>
<td>±0.5% T.</td>
</tr>
<tr>
<td>Monochromator</td>
<td>1200 lines/grating mirror.</td>
</tr>
<tr>
<td>Noise</td>
<td>0.5% T/3min.</td>
</tr>
<tr>
<td>Transmittance reproducibility</td>
<td>0.2 % T.</td>
</tr>
<tr>
<td>Power</td>
<td>220 V 50Hz/110 V ±-10% 50/60Hz.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>22”(W)x14”(D)x11.5”(H) inches.</td>
</tr>
<tr>
<td>Net weight</td>
<td>18 kgs.</td>
</tr>
</tbody>
</table>

BAS-100 is a new concept designed clinical chemistry analyzing system for biochemical research and clinical diagnostics: Powerful data process function makes it easy to perform data management and statistics. report may be in single test or with completed patient data, which will be convenient for clinical diagnostics. BAS-100 includes a suction pump system.

This semi automatic biochemistry analyzer can measure all blood elements and print on built in printer as indicated in the features section.

BAS-100 has a built in printer and flow through system to use up to 32ul and incubating system for 25-30-37o for kinetic test.

Features

- Photometric scanning of Spectrum, Analysis in multiple longitude of wave and kinetics
- Diagnosis of Operation
- Automatic Calibration
- System of aspiration of sample
  (Pale of flow, Aspiration System, Faslk of Residuals, Tubes, Connectors, Etc)
- 2 Reserve halogen Lamp included
- 4 Rolls of Printer Paper included
- Cable and Software connection to PC included
Spectro 2000RS
With 4 automatic cell holder

Spectro 2000 RS is a superior instrument for laboratories and is an advanced and affordable system that generates accurate and reproducible measurements. This spectrophotometer is ideal for chemical laboratories, bio chemical laboratories, analytical and medical laboratories, environmental protection, and agricultural industry. Spectro 2000 RS is accurate, dependable, and an exceptional value. Further, it has excellent baseline stability, high resolution and continuous wavelength ranging from 32 nm to 1100 nm.

Spectro 2000 RS is equipped with the RS-232C interface and port which link the spectrophotometer and the PC with the included UV-VIS software. With the RS-232C the instrument can be linked to a computer and a printer to display the photometric and spectral data on the PC monitor.

Spectro 2000 RS is an automatic instrument which utilizes a microprocessor with most advanced technology. Absorption, transmission, concentration, and wavelength are automatic and computerized. This instrument’s superior technology allows this spectrophotometer to examine samples with excellent resolution. Spectro 2000 RS is rugged, reliable, affordable, and maintenance free.

Spectro 2000 RS’s advantage is its 4 large automatic cell holder movement by microprocessor and use of the soft key pad. This spectrophotometer is excellent for water and water waste testing. Spectro 2000 RS is both reliable and user-friendly.

This Spectro can be used by itself or linked to a PC.

Features
- Automatic self adjustment
- 4 Automatic cell holder
- Auto select wavelength
- Auto Zero ABS and 100% T.
- Auto A/T/C and Factor.
- Auto Escape and back-Up.
- Interface RS232C port for use with computer & printer.
- Built-in printer.
- Switch for 110V 60Hz and 220V 50Hz.
- F.D.A. Licensed.
- High photometric accuracy for smooth spectral band pass.
- Reliable stability for reliable testing
- Wide continuous wavelength range for test flexibility
- Easy to change Tungsten Halogen lamp
- COMPETITIVE PRICE.
- Computer System is optional (NOT INCLUDED).

Testing List
BAS-100 will measure the following elements at blood test:
- T. BILI
- D. BILI
- TP
- ALB
- Lactic Acid
- LP (a)
- CHE
- Fe
- LGM
- R-GT/GGT
- ALP/AKP
- UREA
- CK
- LDH
- AST/GOT
- CHO
- CL
- P
- UA
- GLU
- AMY
- TBA
- ADA
- A
- Zn
- and drug toxicity
- APOB
- APOT
- CK-MB
- ASO
- CO2
- LOL-C
- HS-CRP
- PA
- CHE
- CREA
- Mg
- AFU
- FMN
- HDL-C
- C4
- LgG
- APOB-IB
- APOB
- Mg
- C3
- and drug toxicity
- Hb
- LgC

Included Accessories
- 4 square glass cells 10mm
- 1 mounted multiple 4 cell holder
- Dust cover
- Cable
- Instruction book
- Optional: Large cell holder 20-30-40 and 50mm

Technical Specifications

<table>
<thead>
<tr>
<th>Methods</th>
<th>End point, two points, multi standard, kinetics, bichromatic, serum blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>From 300-800nm, free to choose.</td>
</tr>
<tr>
<td>Wavelength Precision</td>
<td>± 1.0nm.</td>
</tr>
<tr>
<td>Wave of band ghastly</td>
<td>5nm.</td>
</tr>
<tr>
<td>Scanning Speed</td>
<td>1000nm/min.</td>
</tr>
<tr>
<td>Items</td>
<td>store 200 items, which can increase, modify and delete</td>
</tr>
<tr>
<td>Reaction volume</td>
<td>500ul</td>
</tr>
<tr>
<td>Flow through cell</td>
<td>32ul</td>
</tr>
<tr>
<td>Temperature Control System</td>
<td>25°C, 30 °C, 37°C controlled by Peltier element</td>
</tr>
<tr>
<td>Optical system</td>
<td>interferential filters,340,405,492,510,546,578,620( can increase to 9)</td>
</tr>
<tr>
<td>Light source</td>
<td>6V 10W halogen lamp</td>
</tr>
<tr>
<td>Photometric range</td>
<td>0-3-3.0ABS</td>
</tr>
<tr>
<td>Photometric approach</td>
<td>0.003A.</td>
</tr>
<tr>
<td>Printer</td>
<td>Incorporated.</td>
</tr>
<tr>
<td>Display</td>
<td>large LCD screen with back light</td>
</tr>
<tr>
<td>Printer output</td>
<td>built-in stylus/thermal printer</td>
</tr>
<tr>
<td>Serial output</td>
<td>RS-232 standard</td>
</tr>
<tr>
<td>Power supply</td>
<td>220V 50Hz 150VA and 110V. 50/60Hz.</td>
</tr>
<tr>
<td>Dimension</td>
<td>390<em>370</em>180mm</td>
</tr>
</tbody>
</table>

Included Accessories
- 4 square glass cells 10mm
- 1 mounted multiple 4 cell holder
- Dust cover
- Cable
- Instruction book
- Optional: Large cell holder 20-30-40 and 50mm
Optional Accessories

- Multi-purpose cell holder for long path cells
  (Specify Spectro 2000 RS or Spectro 2000 RSP)
- Peltier constant temperature control system (single cell, 15-55°C)
- Square cuvette (optical glass), 10mm path length
- Micro and semi-micro cells, set of 2 with covers, useable for wavelengths from 325 - 1100nm.
  (Specify sample volume: 0.5, 0.75, 1.00 or 1.25ml)
- Rectangular long path cell (optical glass. Specify 20, 30, 40 or 50mm path length)
  (Specify: Spectro 23 RS)
- Constant temperature system for kinetic testing: three square cell holders and front panel.
  (Specify: Spectro 23 or Spectro 23 RS)
- Flow through system (peristaltic pump and flowcell)
- Multi-purpose cell holder for long path (20 - 50mm) rectangular cells
- Holder for test tube cuvettes, 10 - 25mm diameter

Technical Specifications

<table>
<thead>
<tr>
<th>Optical System</th>
<th>Single Beam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength Range</td>
<td>325-1100nm.</td>
</tr>
<tr>
<td>Light Source</td>
<td>Tungsten-Halogen Lamp</td>
</tr>
<tr>
<td>Detector</td>
<td>Silicon Photodiode</td>
</tr>
<tr>
<td>Wavelength Distance</td>
<td>1nm.</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>± 1 nm.</td>
</tr>
<tr>
<td>Wavelength Reproducibility</td>
<td>0.5 nm.</td>
</tr>
<tr>
<td>Spectral Band Pass</td>
<td>6 nm.</td>
</tr>
<tr>
<td>Transmittance Reproducibility</td>
<td>0.3% (T)</td>
</tr>
<tr>
<td>Transmittance Range</td>
<td>0-125% (T)</td>
</tr>
<tr>
<td>Absorption Range</td>
<td>0-1999% (A)</td>
</tr>
<tr>
<td>Concentration Range</td>
<td>0-2000</td>
</tr>
<tr>
<td>Photometric Accuracy</td>
<td>±50% (T) +0.004 A.</td>
</tr>
<tr>
<td>Monochromator Grating Mirror</td>
<td>1200 lines/mm.</td>
</tr>
<tr>
<td>Readout</td>
<td>LCD 2 line</td>
</tr>
<tr>
<td>Power Supply Switching</td>
<td>110V./60 Hz and 220V./50Hz.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>16” x 14” x 8” (Inches).</td>
</tr>
<tr>
<td>Net Weight</td>
<td>20 lb. (9 kg.)</td>
</tr>
</tbody>
</table>

Spectro 2000 RSP
With 4 automatic cell holder

Spectro 2000 RSP is a superior instrument as with Spectro 2000RS with the added benefit of a built in printer. This spectrophotometer is excellent for laboratories and is an advanced and affordable system that generates accurate and reproducible measurements. This spectrophotometer is ideal for chemical laboratories, bio chemical laboratories, analytical and medical laboratories, environmental protection, and agricultural industry. Spectro 2000 RSP is accurate, dependable, and an exceptional value. Further, it has excellent baseline stability, high resolution and continuous wavelength ranging from 325 nm to 1100 nm.

Spectro 2000 RSP is equipped with the RS-232C interface and port which link the spectrophotometer and the PC with the included UV-VIS software. With the RS-232C the instrument can be linked to a computer and a printer to display the photometric and spectral data on the PC monitor.

Spectro 2000 RSP is an automatic instrument which utilizes a microprocessor with most advanced technology. Absorption, transmission, concentration, and wavelength are automatic and computerized. This instrument’s superior technology allows this spectrophotometer to examine samples with excellent resolution. This spectrophotometer is rugged, reliable, affordable, and maintenance free.

Spectro 2000 RSP’s advantage is its 4 automatic cell holder movement by microprocessor and use of the soft key pad. This machine is both reliable and user-friendly.

Features

- Automatic self adjustment
- Automatic 4 Cell holder
- Auto select wavelength.
- Auto Zero ABS and 100%.T.
- Auto A/T/C and Factor.
- Auto Escape and back-Up.
- Interface RS232C port for use with computer & printer.
- Built-in printer.
- Switch for 110V 60Hz. and 220V 50Hz.
- F.D.A. Licensed.
- High photometric accuracy for smooth spectral band pass.
- Reliable stability for reliable testing
- Wide continuous wavelength range for test flexibility
- Easy to change Tungsten Halogen lamp
- Optional electro thermal possibility.
- COMPETITIVE PRICE.
- Computer System is optional (NOT INCLUDED)

Included Accessories

- 4 square glass cells 10mm
- 1 mounted multiple 4 cell holder
- Dust cover
- Cable
- Instruction book
Included Accessories

- Multi-purpose cell holder for long path cells (Specify Spectro 2000 RS or Spectro 2000 RSP)
- Peltier constant temperature control system (single cell, 15-55ºC)
- Square cuvette (optical glass), 10mm path length
- Micro and semi-micro cells, set of 2 with covers, useable for wavelengths from 325 - 1100nm.
- Rectangular long path cell (optical glass, Specify 20, 30, 40 or 50mm path length)

Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical System</td>
<td>Single Beam</td>
</tr>
<tr>
<td>Wavelength Range</td>
<td>325-1100nm.</td>
</tr>
<tr>
<td>Light Source</td>
<td>Tungsten-Halogen Lamp</td>
</tr>
<tr>
<td>Detector</td>
<td>Silicon Photodiode</td>
</tr>
<tr>
<td>Wavelength Distance</td>
<td>1nm.</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>+ 1 nm.</td>
</tr>
<tr>
<td>Wavelength Reproducibility</td>
<td>0.5 nm.</td>
</tr>
<tr>
<td>Spectral Band Pass</td>
<td>6 nm.</td>
</tr>
<tr>
<td>Transmittance Reproducibility</td>
<td>0.3% (T)</td>
</tr>
<tr>
<td>Transmittance Range</td>
<td>0-125% (T)</td>
</tr>
<tr>
<td>Absorption Range</td>
<td>0-19999% (A)</td>
</tr>
<tr>
<td>Concentration Range</td>
<td>0-2000</td>
</tr>
<tr>
<td>Photometric Accuracy</td>
<td>+50% (T) +0.004 A.</td>
</tr>
<tr>
<td>Monochromator Grating Mirror</td>
<td>1200 lines/mm.</td>
</tr>
<tr>
<td>Readout</td>
<td>LCD 2 line</td>
</tr>
<tr>
<td>Printer</td>
<td>Included</td>
</tr>
<tr>
<td>Power Supply Switching</td>
<td>110V/60 Hz. and 220V/50Hz.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>16” x 14” x 8” (Inches).</td>
</tr>
<tr>
<td>Net Weight</td>
<td>20 lb. (9 kg.)</td>
</tr>
</tbody>
</table>

Spectro 23 RS

Spectro 23 RS is a traditional analytical instrument used in conventional laboratories with advanced technology of built-in interface RS-232C. The interface enables this spectrophotometer to communicate with any IBM compatible computer and printer. With the RS-232C, port, and the UV-VIS software enables this instrument to be linked to a computer and a printer to display the photometric and spectral data on the PC monitor. The superior machinery of Spectro 23 RS analyzes, stores, records, and prints test results swiftly and consistently. This spectrophotometer can work in the Visible, Near-Ultraviolet, and Near Infrared Spectral Range and it is perfectly suited for quantitative and qualitative analysis. This spectrophotometer delivers enhanced ease-of-use, precision and accuracy resulting in time and cost savings, as well as unprecedented confidence in test results. This new generation instrument is equipped with a microprocessor to automatically adjust 100 % T and Zero ABS, Factor and Concentration.

Spectro 23 RS is an economical four cell visible spectrophotometer which is ideal for small laboratories, biochemical labs, clinical labs, and educational institutions. This spectrophotometer uses soft key pad and delivers enhanced ease-of-use, precision and accuracy resulting in time and cost savings, as well as unprecedented confidence in test results. Spectro 23 RS is easy to use, affordable, compact and light weight. It has a continuous wavelength ranging from 320 nm to 1100 nm. Spectro 23 RS is able to analyze and record four sample results immediately. Furthermore, Spectro 23 RS may save the reagents and samples by using the optional semi-micro cuvette of 1.5 ml or less to help reduce waste. Spectro 23 RS is rugged, reliable, low cost, and maintenance free. This instrument simplifies analysis and increases measurement capabilities for routine applications in various fields such as chemistry, biochemistry, agricultural, petrochemistry, environmental protection, science classes, educational laboratories and general analytical industry.

This Spectro can be used by itself or linked to a PC.

Features

- A very durable instrument.
- Test tube holder and large cell optional.
- Wide, continuous wavelength ranges for test flexibility.
- Automatic absorption, transimission and concentration by microprocessor
- High photometric and wavelength accuracy for the best results by having a 6 nm bandwidth.
- Low stray radiant energy and noise for unequivocal readings, even at high absorbencies.
- Excellent stability characteristics for reliable test results.
- Carefully designed. Easy operation and maintenance.
- High absolute reading accuracy, outstanding stability and reproducibility with distinct digital display.
- F.D.A. Licensed.
- Very competitive price.
- Can be applied for constant temperature & kinetic test by optional parts.
- At Labomed, we believe greatly in the accuracy of our spectrophotometers. We are so sure of the quality that we include 2 testing filters free of charge for testing calibration.
- Small printer is available for date printout as an option, which does not require a computer hookup or software.
- Computer System is optional (NOT INCLUDED).
Included Accessories
- 4 square cells 10mm.
- 1 instruction book.
- 1 dust cover.
- 1 multiple cell holder for 4 cells.
- 1 cable.

Included Accessories
- Constant temperature system for kinetic testing: three square cell holders and front panel.
  (Specify: Spectro 23 or Spectro 23 RS)
- Flow through system (peristaltic pump and flowcell)
- Multi-purpose cell holder for long path (20 - 50mm) rectangular cells
- Holder for test tube cuvettes, 10 - 25mm diameter
- Set of 2 performance testing filters
  (1 "E filter" for photometric accuracy test and 1 didymium filter for wavelength accuracy test)
  (Specify: Spectro 23 RS)

Included Accessories
- 4 square cells 10mm.
- 1 instruction book.
- 1 dust cover.
- 1 multiple cell holder for 4 cells.
- 1 cable.

Technical Specifications

<table>
<thead>
<tr>
<th>Optical System</th>
<th>Single Beam Spectrophotometer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength Range</td>
<td>320-1100nm.</td>
</tr>
<tr>
<td>Light Source</td>
<td>Tungsten-Halogen Lamp</td>
</tr>
<tr>
<td>Detector</td>
<td>Silicon Photodiode</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>2nm.</td>
</tr>
<tr>
<td>Wavelength Reproducibility</td>
<td>0.5nm.</td>
</tr>
<tr>
<td>Spectral Band Pass</td>
<td>6nm.</td>
</tr>
<tr>
<td>Stray Light</td>
<td>&lt;0.5% T. at 360nm.</td>
</tr>
<tr>
<td>Transmittance Range</td>
<td>0-100% (T)</td>
</tr>
<tr>
<td>Absorption Range</td>
<td>0-1999 (A)</td>
</tr>
<tr>
<td>Concentration Range</td>
<td>0-2000</td>
</tr>
<tr>
<td>Photometric Accuracy</td>
<td>+0.5% (T) +0.004A</td>
</tr>
<tr>
<td>Transmittance Reproducibility</td>
<td>0-100%T. 0.5% (T)</td>
</tr>
<tr>
<td>Monochromator</td>
<td>Grating Mirror 1200 Lines/nm</td>
</tr>
<tr>
<td>Multi Cell Holder</td>
<td>4 Cuvettes</td>
</tr>
<tr>
<td>Power Supply</td>
<td>230V. 50Hz/110V 60Hz</td>
</tr>
<tr>
<td>Dimensions</td>
<td>22&quot;(W) x 14&quot; (D) x 11 ½ (H) Inches</td>
</tr>
<tr>
<td>Net Weight</td>
<td>35 Lbs.</td>
</tr>
</tbody>
</table>

Spectro 23

Spectro 23 is a traditional analytical instrument used in conventional laboratories. This spectrophotometer can work in the Visible, Near-Ultraviolet, and Near Infrared Spectral Range and it perfectly suited for quantitative and qualitative analysis. This spectrophotometer delivers enhanced ease-of-use, precision and accuracy resulting in time and cost savings, as well as unprecedented confidence in test results. This new generation instrument is equipped with a microprocessor to automatically adjust 100 % T and Zero ABS, Factor, and Concentration.

Spectro 23 is an economical four cell visible spectrophotometer which is ideal for small laboratories, biochemical labs, clinical labs, and educational institutions. This spectrophotometer uses soft key pad and delivers enhanced ease-of-use, precision and accuracy resulting in time and cost savings, as well as unprecedented confidence in test results. Spectro 23 is easy to use, affordable, compact and light weight. It has a continuous wavelength ranging from 320 nm to 1100 nm. Spectro 23 is able to analyze and record four (4) sample results immediately. Furthermore, Spectro 23 may save the reagents and samples by using the optional semi-micro cuvette of 1.5 ml or less to help reduce waste.

Spectro 23 is rugged, reliable, low cost, and maintenance free. This instrument simplifies analysis and increases measurement capabilities for routine applications in various fields such as chemistry, biochemistry, agricultural, petrochemistry, environmental protection, science classes, educational laboratories and general analytical industry.

This Spectro can only be used by itself (No PC connection is available).

Features
- A very durable instrument.
- Test tube holder and large cell optional.
- Wide, continuous wavelength ranges for test flexibility.
- Automatic absorption, transmission, factor and concentration by microprocessor
- High photometric and wavelength accuracy for the best results by having a 6 nm bandwidth.
- Low stray radiant energy and noise for unequivocal readings, even at high absorbencies.
- Excellent stability characteristics for reliable test results
- Carefully designed. Easy operation and maintenance.
- High absolute reading accuracy, outstanding stability and reproducibility with distinct digital display.
- F.D.A. Licensed.
- Very competitive price.
- Can be applied for constant temperature & kinetic test by optional parts.
- At Labomed, we believe greatly in the accuracy of our spectrophotometers. We are so sure of the quality that we include 2 testing filters free of charge for testing calibration.
- Computer System is optional (NOT INCLUDED).

Included Accessories
- 4 square cells 10mm.
- 1 instruction book.
- 1 dust cover.
- 1 multiple cell holder for 4 cells.
- 1 cable.
Included Accessories
- Constant temperature system for kinetic testing: three square cell holders and front panel.
  (Specify: Spectro 23 or Spectro 23 RS)
- Flow through system (peristaltic pump and flowcell)
- Multi-purpose cell holder for long path (20 - 50mm) rectangular cells
- Holder for test tube cuvettes, 10 - 25mm diameter
- Set of 2 performance testing filters
  (1 "E filter" for photometric accuracy test and 1 didymium filter for wavelength accuracy test)

Technical Specifications

<table>
<thead>
<tr>
<th>Optical System</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Wavelength Range</td>
<td>320-1100nm.</td>
</tr>
<tr>
<td>Light Source</td>
<td>Tungsten-Halogen Lamp</td>
</tr>
<tr>
<td>Detector</td>
<td>Silicon Photodiode</td>
</tr>
<tr>
<td>Wavelength Accuracy</td>
<td>2nm.</td>
</tr>
<tr>
<td>Wavelength Reproducibility</td>
<td>0.5nm.</td>
</tr>
<tr>
<td>Spectral Band Pass</td>
<td>6nm.</td>
</tr>
<tr>
<td>Stray Light</td>
<td>&lt;0.5%T. at 360nm.</td>
</tr>
<tr>
<td>Transmittance Range</td>
<td>0-100% (T)</td>
</tr>
<tr>
<td>Absorption Range</td>
<td>0-1999 (A)</td>
</tr>
<tr>
<td>Concentration Range</td>
<td>0-2000</td>
</tr>
<tr>
<td>Photometric Accuracy</td>
<td>+0.5% (T) +0.0004A</td>
</tr>
<tr>
<td>Transmittance Reproducibility</td>
<td>0-100% T. 0.5% (T)</td>
</tr>
<tr>
<td>Monochromator</td>
<td>Grating Mirror 1200 Lines/nm</td>
</tr>
<tr>
<td>Multi Cell Holder</td>
<td>4 Cuvettes</td>
</tr>
<tr>
<td>Power Supply</td>
<td>230V. 50Hz/110V 60Hz</td>
</tr>
<tr>
<td>Dimensions</td>
<td>22&quot;(W) x 14&quot; (D) x 11 ½ (H) inches</td>
</tr>
<tr>
<td>Net Weight</td>
<td>35 Lbs.</td>
</tr>
</tbody>
</table>