

UV-3200

Double Beam Spectrophotometer



The two detectors measure sample and reference respectively and simultaneously for optimizing measurement accuracy. They provide excellent performance for measurements in the range of 190 to 1100nm. They are suitable for pharmaceutical, biochemical and clinical lab applications as well as routine applications such as quantitative analysis, kinetics, wavelength scan, multiple components and DNA/Protein.

- PC Windows application software make these instruments versatile.
- Variable slits (bandwidths)
- For Stand-alone instrument, all software methods are included as built-in standard; this eliminates the need of software.
- Online software upgrade via internet helps to keep it updated.
- Data Download-to-PC software expands the data storage to unlimited.

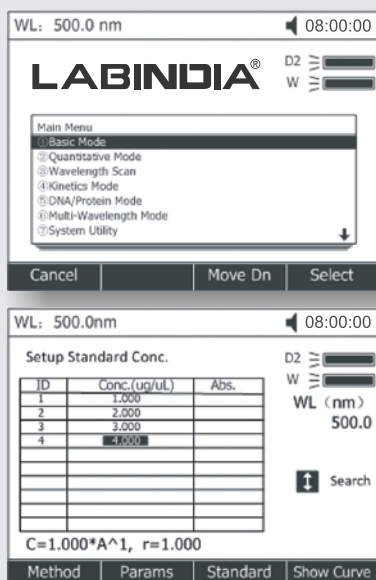


| Specifications | Double Beam Optical System with Automatic 8-Cell Changer - Model 3200 |
|-----------------------------|--|
| Wavelength Range | 190nm to 1100nm |
| Working Mode | Stand alone and PC controlled with window based application software UV/VIS Analyst |
| Spectral Band Width | Variable 0.5, 1, 2, 4 nm |
| Monochromator | Double beam hollow graphic gratings 1200 lines/mm |
| Wavelength Display | 0.1nm |
| Wavelength Setting | 0.1nm |
| Wavelength Accuracy | ± 0.1 nm @656.1nm D2 ± 0.3nm (190 to 1100nm) |
| Wavelength Repeatability | 0.1nm |
| Stray Light | 0.02% @ 340nm for NaNO2 0.25% @ 198nm for Kcl |
| Optional Accessory | Specular Reflection Accessory, Integrating Sphere 60mm / 100 mm Automatic 8 Cell changer, long path Cell holder, Peltier Solid Sample holder etc. |
| Photometric Range (Approx.) | 0-400%T Absorbance -4 to 4 |
| Photometric Accuracy | ± 0.002 Abs(0.5) ± 0.004 Abs(1.0) ± 0.006 Abs(2.0) |
| Photometric Reproducibility | 0.001 Abs(0.5 Abs) 0.001 Abs(1.0 Abs) 0.003 Abs(2.0 Abs) |
| Baseline Stability | < 0.0002 Abs/H @ 500 nm |
| Baseline Flatness | ± 0.0005 Abs |
| Noise Level | 0.000016 Abs RMS @ 500 nm |
| Scan Speed | 2-3000 nm per Minute |
| Light Source | Tungsten and Deuterium Lamp, pre-aligned |
| Output | USB Port and Parallel Port (Printer) |
| DNA/Protein Measurement | Included |
| Dimension (W x D x H) | 600 x 450 x 200 mm |
| Weight | 22kg |
| Memory | USB Memory Devices (standard accessory) |
| Wavelength Slew Rate | 6500 nm/min. |
| Lamp Interchange Wavelength | Automatic interchange linked to wavelength. The interchange wavelength can be set freely. |
| Detector | Silicon Photodiode (Dual) |

The PC Models come standard with windows based application software UV/Vis Analyst

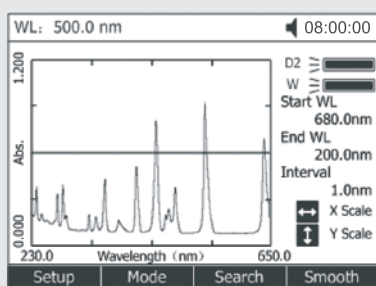
UV-3200 Local Control Software

All methods are included as built-in standard; this eliminates the need of software. Online software update via Internet. The local control software includes functions such as: Photometry, Quantitative, Wavelength Scan, Kinetics, DNA/Protein, Multi-wavelength Test and System Utilities.



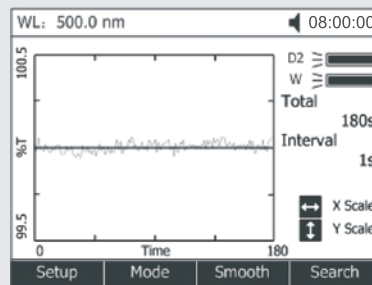
Standard Curve

Up to 10 standard solutions may be used to establish calibration equation curve. There is a choice of four methods for fitting curve through the calibration points: Linear fit, Linear fit through zero, square fit and cubic fit.



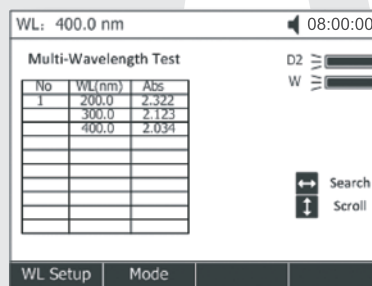
Wavelength Scan

The Wavelength Scan intervals are 0.1, 0.2, 0.5, 1, 2, 5nm, and High, Medium and Low scan speeds are available. Wavelengths are scanned from high to low so that the instrument stand-by at high wavelength. This minimizes the degradation of UV sensitive samples. Precise control of filter and lamp changes means that their effects are not seen on the final scan. Post-run manipulation includes re-scaling axes, curve tracking and peak picking.



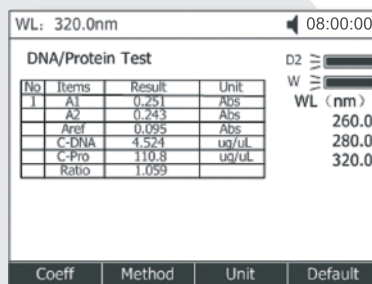
Kinetics

This mode may be used for time course scanning or reaction rate calculations. Abs. vs. time graphs is displayed on the screen in real time. Wait time and measurement time up to 12 hours may be entered with time intervals of 0.5, 1, 2.5, 10, 30, seconds and 1 min. Post-run manipulation includes re-scaling, curve tracking and selection of the part of the curve required for the rate calculation. Rate is calculated using a linear regression algorithm before multiplying by the entered factor.



Multi-Wavelength

Up to 10 wavelengths may be entered, allowing the measurement of multiple wavelengths on a series of Samples.



DNA/Protein Test

Concentration and DNA purity are calculated Absorbance ratios 260nm/280nm or 260nm/230nm with optional subtracted absorbance at 320nm

$$\text{DNA Concentration} = 62.9 * A_{260} - 36.0 * A_{280}$$

$$\text{Or } 49.1 * A_{260} - 3.48 * A_{230}$$

$$\text{Protein Concentration} = 1552 * A_{260} - 757.3 * A_{280}$$

$$\text{Or } 183 * A_{260} - 75.8 * A_{230}$$

Other wavelengths and factors may be entered.

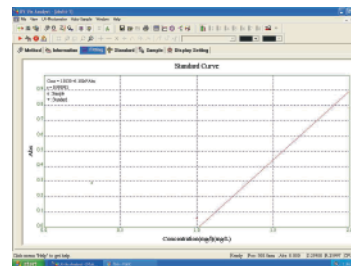
PC Application software

The LABINDIA Windows®

based PC application software UV/Vis Analyst takes the best features of the stand-alone version plus more powerful data processing, expanded data collecting, and storage capability. It comes standard with LABINDIA PC models and is optional to stand-alone models.

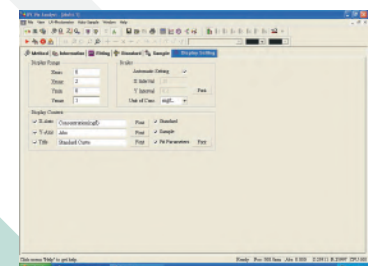
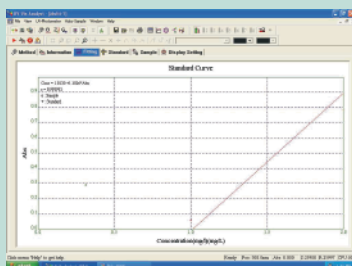
The PC Application Software offers:

1. Photometric Mode
2. Quantitative test (standard curve)
3. Wavelength Scan
4. Kinetics
5. DNA/Protein
6. Multi-Wavelength
7. System Utility



• Kinetics (Abs vs. Time)

The Kinetics mode may be used for time course scanning or reaction rate calculations. Abs Vs. Time graphs are displayed on the screen in real time. Waiting time, measurement time and time intervals may be entered. Post-run manipulation includes re-scaling, curve tracking and selection of the part of the curve required for the rate calculation. Rate is calculated using a linear regression algorithm before multiplying by the entered factor.



• Quantitative Test (Standard curve)

Use up to 20 standards to establish standard curve. Four methods for fitting a curve:

1. Linear fit
2. Linear through zero
3. Square fit
4. Cubic fit

• DNA/Protein

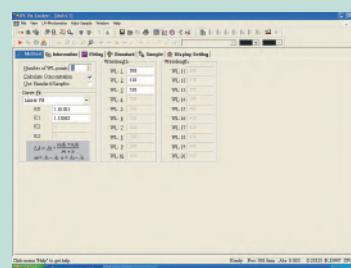
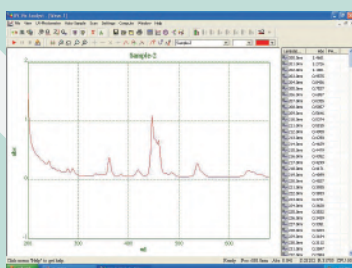
Concentration and DNA purity are quickly and easily calculated:

Absorbance ratios 260nm/280nm with optional subtracted absorbance at 320nm.

DNA Concentration = $62.9 \cdot A_{260} - 36.0 \cdot A_{280}$

Protein Concentration = $1552 \cdot A_{260} - 757.3 \cdot A_{280}$

Other wavelengths and factors may be entered.



• Wavelength Scan

Automatically record peaks and valleys. The quantity of channels is unlimited; you can simultaneously store as many as desired. Post-run manipulation and processing includes:

1. Re-scaling axes, curve
2. 1st to 4th derivative
3. Smoothing, combination, zooming, overlap.

• Multi-wavelength

Up to 20 wavelengths can be selected and multiple samples can be measured. (Auto cell changer is required to run multiple samples automatically)

Optional Accessories

Micro Cell Holder

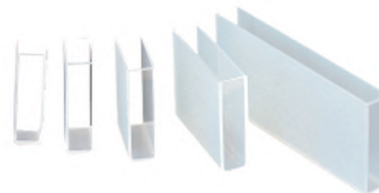
900210



Square Cuvettes

Square Cuvettes Quartz
916111-916115

Square Cuvettes Glass
916101-916105



Test Tube Holder

900530



Mirco Cell Quartz

916121-916123

Self Masking Cont. Flow-through G.Cell
916131-916134

Self Masking Cont. Flow-through Q.Cell
916141-916144



8-Position Auto Cell Changer

900310



Stylus Printer

900920



Solid Sample Holder (Single Cell)

900550



Milas Deuterium Lamp

916633



Water-Jacketed Cell Holder

900610

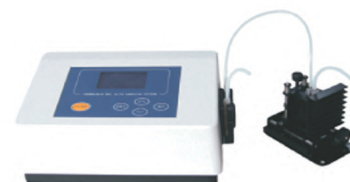


Constant-Temperature Sipper System

900130

Constant-Temperature System
900120

Sipper System
900110



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Striving to become the best individuals, we endeavour to foster the best team. Performing sensibly, we try to achieve the best efficiency. Working innovatively, we seek to make the best products. Listening patiently, we excel to offer the best service. So, no matter what you needs are, come to us, **GET THE BEST**

LABINDIA reserve the right to change specification without notice as part of its continuous programme of product development.