

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. Scan / measuring modes Absorbance, concentration, intensity, % transmittance, calibration curve, multi wavelengths.

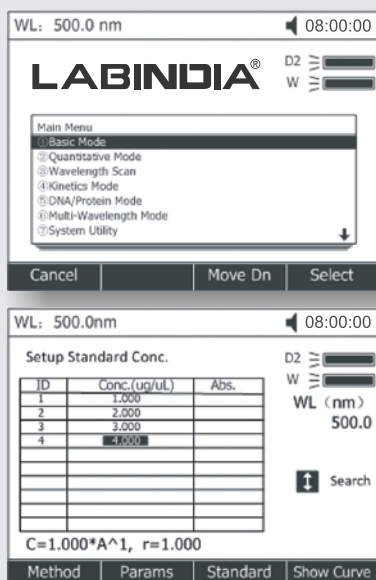
- PC Windows application software make these instruments versatile.
- Variable slits (bandwidths)
- For Stand-alone instrument, all software methods are included as built-in standard; this eliminates the need of software.
- Online software upgrade via internet helps to keep it updated.
- Data Download-to-PC 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	≤ 1% T (KCl at 198 nm), ≤ 0.05% T (NaI at 220 nm), ≤ 0.01% T (NaNO2 at 340 nm)
Optional Accessory	Specular Reflection Accessory, Integrating Sphere 60mm / 100 mm Automatic 8 Cell changer, Rectangular cell holder for variable path length, Large sample compartment having stable and reproducible mounting of accessories for easy use of different cells., 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	Available
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)
Cell holder is easy to remove for cleaning purpose	
Data storage more than 1000 points	
The PC Models come standard with windows based application software UV/Vis Analyst	

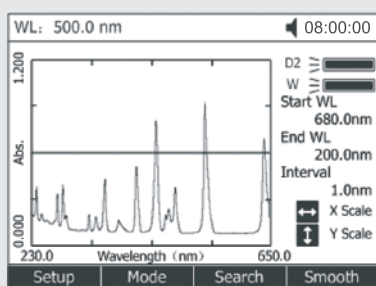
UV-3200 Local Control Software

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.



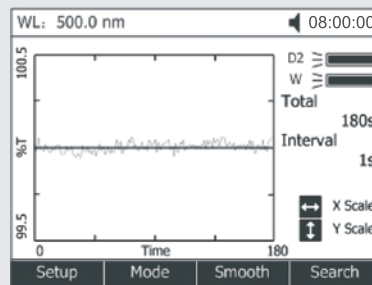
Standard Curve

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.

The screenshot shows the 'Multi-Wavelength Test' interface. The top bar displays 'WL: 400.0 nm' and '08:00:00'. The table below shows the following data:

No	WL(nm)	Abs
1	200.0	2.322
	300.0	2.123
	400.0	2.034

Buttons at the bottom are 'WL Setup', 'Mode', 'Search', and 'Scroll'.

Multi-Wavelength

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

The screenshot shows the 'DNA/Protein Test' interface. The top bar displays 'WL: 320.0nm' and '08:00:00'. The table below shows the following data:

No	Items	Result	Unit
1	A1	0.251	Abs
	A2	0.243	Abs
	Aref	0.095	Abs
	C-DNA	4.524	ug/uL
	C-Pro	110.8	ug/uL
	Ratio	1.059	

Parameters on the right include: WL (nm) 260.0, 280.0, 320.0. Buttons at the bottom are 'Coeff', 'Method', 'Unit', and 'Default'.

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.

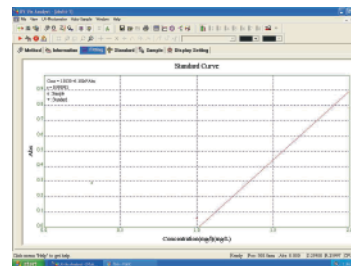
PC Application software

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.

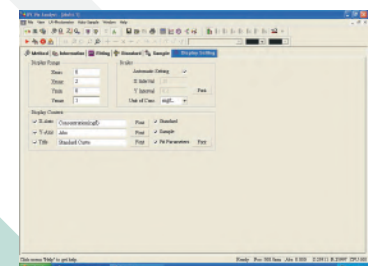
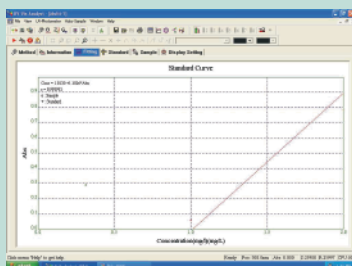
The PC Application Software offers:

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

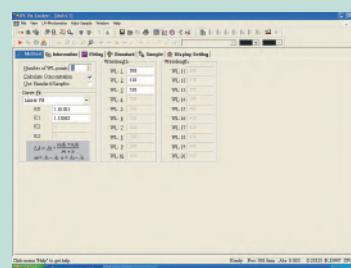
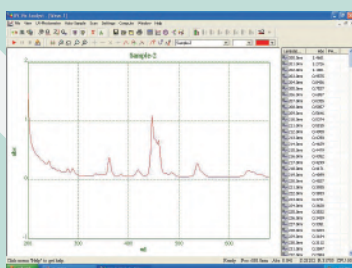
Concentration and DNA purity are quickly and easily calculated:

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

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

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

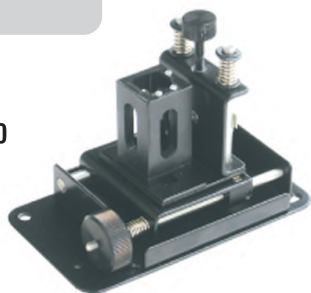
Other wavelengths and factors may be entered.



Optional Accessories

Micro Cell Holder

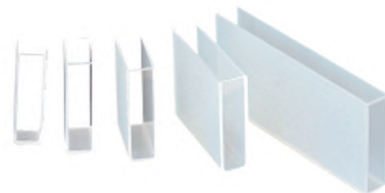
900210



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



Long Path Cell Holder

LS19-1

Pathlength:
5, 10, 20, 30, 40, 50, 100mm

Number of Cells:
2 Cells
(one for Sample and
one for Reference)



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 your needs are, come to us, **GET THE BEST**

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