



## PC - Based Double Beam Spectrophotometer - 2202



Versatile instrument for Research and Industrial Laboratories. The instrument is designed with precision and technique for accurate qualitative and quantitative Spectrophotometric analysis in Agricultural, Chemical, Pharmaceutical, Medical, Bio-technological, Forensic etc. fields. The PC based operation is user friendly for beginners and gives enough scope for data handling to experienced scientists.

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# PC - Based Double Beam Spectrophotometer - 2202



## SPECIFICATIONS

### OPTICS

Modified Czerny-Turner Monochromator geometry for better aberration correction. Holographic diffraction grating with 1200 lines/mm blazed at 250 nm & Advanced Split Beam Technology with PC controlled settings.

### WAVELENGTH

Range : 200 to 1100 nm  
Accuracy :  $\pm 0.5$  nm  
Repeatability :  $\pm 0.2$  nm  
Resolution : 0.1 nm (200 to 1100 nm)  
Bandwidth : 2.0 nm

### PHOTOMETRIC

Range : -2.5 to 2.5 Abs ( $\pm 4.0$  Abs)  
Accuracy :  $\pm 0.005$  Abs at 1.0 Abs  
Repeatability :  $\pm 0.002$  Abs at 1.0 Abs

### STRAY LIGHT

Less than 0.05%T at 220 nm and 370 nm

### BASELINE CORRECTION

Automatic Baseline correction using Advanced Digital Signal Processing (DSP) techniques

### BASELINE FLATNESS

Within  $\pm 0.003$  Abs from 200 to 1100 nm (excluding noises) after baseline calibration

### SCAN SPEED

Slow, Medium and Fast

### DATA INTERVAL

Depends on wavelength scan range and scan speed

### SAMPLE HOLDER

Five position automatic positioning 10 mm cuvette for Samples and one fixed position for Reference cuvette

### SOURCE

Tungsten-Halogen lamp (320 to 1100 nm)  
Deuterium lamp (200 to 340 nm)

### DETECTOR

Two Si-Photodiodes

### ORDER CUT-OFF FILTER

Four glass filters, automatically positioned to eliminate grating spectral order interferences

### MINIMUM VOLUME

- (i) Without Cell riser 500 $\mu$ l in 1 ml cuvette, 2 ml in 4 ml cuvette
- (ii) With Cell riser 250 $\mu$ l in 1 ml cuvette, 1 ml in 4 ml cuvette

### OPERATING MODES

- (i) Single Wavelength
- (ii) Multi Wavelength (Max. 15 wavelengths)
- (iii) Scan (With multi-scan facility)
- (iv) Time / Kinetic\* Scan (With Derivative facility)

### MEASURING MODES

- (i) Absorbance
- (ii) % Transmittance
- (iii) Concentration (K factor, multi standard)
- (iv) Multi-Component Analysis (Max. 10 components)

### AUTOMATIC CALIBRATIONS / OPTIMISATIONS (GLP/GMP)

- (i) Base line calibration
- (ii) Source optimisation
- (iii) Cell optimisation
- (iv) Wavelength calibration
- (v) Electronics calibration
- (vi) Self-diagnosis

### DATA PROCESSING

- (i) Peak Pick / Point Pick / Valley pick
- (ii) Expansion / Compression of Spectra
- (iii) 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Derivative
- (iv) Averaging of Scans
- (v) Subtraction of first two scans
- (vi) Three levels of smoothening of Spectra
- (vii) Ratio, Corrected ratio, 2 point and 3 point net Abs (The facilities can be used for DNA & Protein Analysis)
- (viii) Comparison of concentration

### DATA PRESENTATION

Display of graphic and tabular data on Computer Monitor, permanent data storage on hard disk, hard copy of graphic and tabular data on printer

### COMPUTER SYSTEM

PENTIUM-IV or higher version with Colour Monitor, RS-232 port or USB port with WIN-XP Operating System or above

### RS 232 PORT

PC control (RS-232 or USB to serial)

### POWER

230V,  $\pm 10\%$ , 50Hz

### DIMENSION

520(W) X 500(D) X 190(H) mm

### WEIGHT

23 kg (Approx)

### ACCESSORIES

2 matched 10 mm Quartz cuvettes

### OPTIONAL ACCESSORIES

- Holder for 50 mm or 100 mm cylindrical and rectangular cuvettes
- Personal Computer / Laptop / Windows compatible printer
- \* For Kinetic Scan, use External Control Dry Bath / Incubator

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.