

Chapter 1. Summary

Scanning Series UV/Vis Spectrophotometer have the characters of wide range of wavelength, high sensitivity, powerful function, easy to use, simple structure and pretty figure. Besides these, the large LCD, High Precise A/D and easy to store RAM makes the instrument much more superior than other originals. It is widely used in Chemistry, Pharmaceuticals, Biochemical, metallurgy, Light Industry, Textile, Material, Environments, Medical, Education and some other fields. It is one of the most important instruments in Quality Control and an essential in normal laboratories.

1. Working Principle and Structure

Different matter has different but special absorbance wavelength point. Also, when at the fixed wavelength point, the absorbance has some relation to the substance's (Always transparent Solution) concentration and its thickness. The relation can be concluded as the following Formula which is called Lambert-Beer Law.

$$T = I/I_0$$
$$A = KCL = -\log I/I_0$$

A	Absorbance
C	Concentration of the Solution
K	Absorbance Coefficient of the Solution
L	The length of the Solution in the light path
I	The intensity of the light focused on the A/D after it permeate the solution to be measured.
I ₀	The intensity of the light focused on the A/D after it permeate the Solution.

Note:

When test, the solvent is usually taken as the Reference Solution and its Transmittance is considered as 100%T. While the Transmittance of the sample to be tested is a relative value which is got comparing to that of the Reference.

2. Main Specifications

- Wavelength Range:
MS-SP195-1100: 195-1100nm; MS-SP320-1100: 325-1020nm
- Stray Light: $\leq 0.1\%T @ 220nm, 360nm$
- Bandwidth: 4nm
- Photometric Range: 0-200% T, -0.301-3.0A
- Wavelength Accuracy: $\pm 1.5nm$
- WL. Repeatability: 0.2nm
- Photometric Accuracy: $\pm 0.5\%T$
- Stability: 0.002A/h @ 500nm
- Display: 128×64 Dots Matrix LCD
- Data Output: USB, Parallel