Electro Optical Components, Inc.

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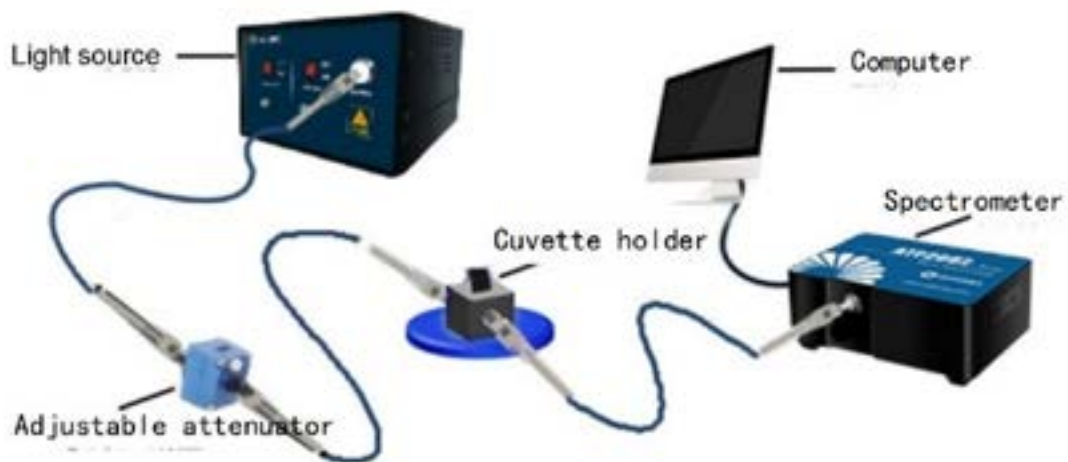www.eoc-inc.com | info@eoc-inc.com

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Spectral application solution   -   Liquid absorbance test

Absorbance measurement system kit – EOC-SI-9020

1. Scheme diagram

2. Principle of absorbance measurement

According to Beer-Lambert's Law, the chemical components in a solution or gas will quantitatively absorb light, and the absorbance is directly proportional to the molar absorption rate, optical path and medium concentration. The analysis of ultraviolet/visible/near-infrared spectra using CCD array detectors is highly suitable for the detection of a large number of samples in industrial production. This method replaces the traditional cumbersome chemical separation determination and meets the requirements of online rapid detection. Absorption rate measurement can be carried out by using different experimental devices and spectrometers with different wavelength ranges (such as immersion fiber optic detectors, flowing sample cells or glass cuvette cups), combined with light sources (deuterium lamps or deuterium-tungsten integrated light sources).
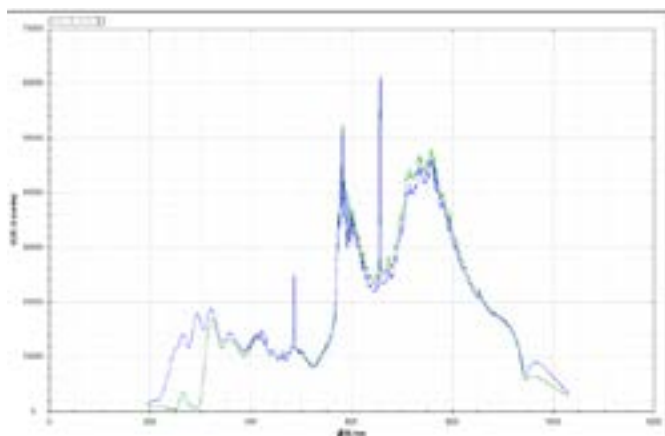
$$A_\lambda = -log10 \left(\frac{S_\lambda - D_\lambda}{R_\lambda - D_\lambda} \right)$$
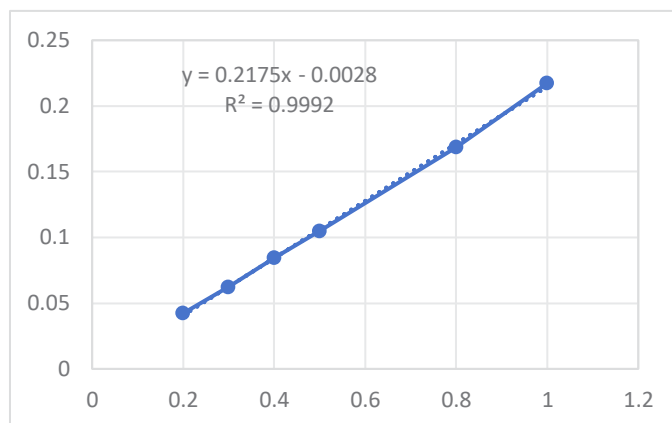
3. Configuration list

	UV light band	Near-infrared band
Spectrometer	ATP2000P	ATP8000
light source	ATG1020H	ATG1020H
Cuvette sample cell	FJ0080	FJ0080
Cuvette	FJ00027	FJ00027
Fiber	UV fiber*2	Infrared optical fiber*2
Attenuator	Optional, with an additional optical fiber required	
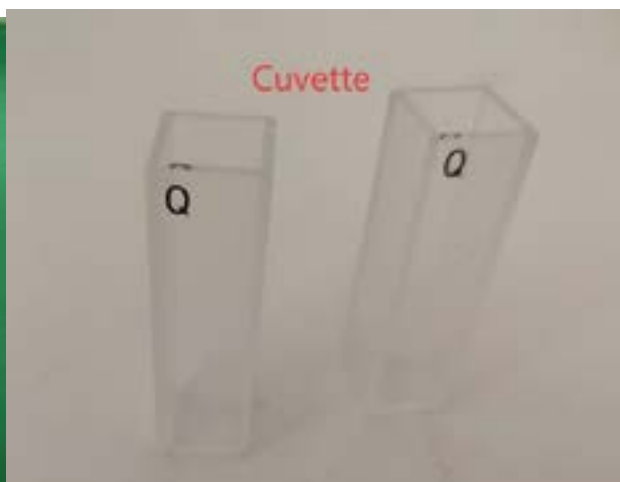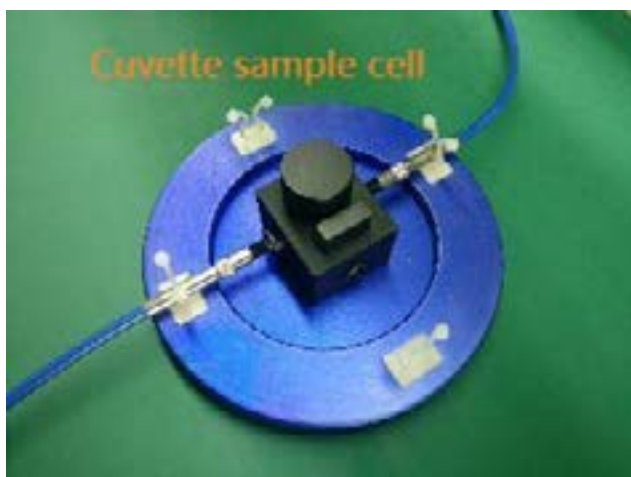
4. Specific effect drawing

Sample spectral curve

y = 0.2175x - 0.0028
R² = 0.9992

Test the absorbance and concentration fitting curve of the solution