



**AE**Labs

## Spectrophotometers

- Micro-volume UV-VIS
- UV-VIS
- Visible
- Flame Photometer

**Lab & Medical Instruments Global Supplier.**

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- Sterilizer
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**AE Lab**

# Content

**ISO/CE passed**

## 1. Micro-volume UV VIS Spectrophotometer

\* AE-BIO500 Series

## 2. UV Vis Spectrophotometer.

\* Double Beam: AE-S90 Series

\* Single Beam: AE-S80 Series, AE-S70 Series, AE-S60 Series.

## 2. Visible Spectrophotometer.

\* AE-S70 Series, AE-S60 Series, AE-S50 Series.

## 3. Flame Photometer

\* AE-SFP40, SFP60, SFP100

\* AE-SFP500, SFP401, SFP402, SFP301, SFP302, SFP200

**Contact Us:**

# UV Vis Spectrophotometer

## (Micro-volume)

### Introduction:

AE-BIO500 is a Micro-volume UV Vis Spectrophotometer designed for nucleic acid measurements. It can accurately measure nucleic acid samples, and is no need to dilute high-concentration samples. Simply pipette 0.5~2ul sample onto the pedestal, laying down the sampling arm, AE-BIO500 can automatically complete the measurement within 5 seconds.

### Features:

- ✧ Direct, easy measurements in less than 5 seconds:  
just pipette & wipe.
- ✧ Full spectral output.
- ✧ Measures DNA, RNA (A260) and Protein (A280),  
concentrations and sample purity (260/280ratio).
- ✧ Large concentration range without dilutions.
- ✧ User-friendly software that includes Custom Methods and data  
export capabilities.
- ✧ Low-cost operation--no plates or other consumables



### Technical Specifications:

Model	AE-BIO500
Order Code	AE-BIO500-A
Wavelength Range	200~850 nm
Minimum Sample Size	0.5~2.0ul
Path Length	0.2mm (For high concentration measwrement) 1.0mm (For ordinary)
Light Source	Xenon flash lamp
Detector Type	3864-element linear silicon CCD array
Wavelength Accuracy	1nm
Spectral Resolution	≤ 3 nm (FWHM at Hg 546 nm)
Absorbance Precision	0.003 Abs
Absorbance Accuracy	1% (at 0.76 at 350 nm)
Absorbance Range	0.02 - 75 (10 mm equivalent)
Measurement Time	< 5s
Dimensions (W x D x H)mm	200 x 262 x 154
Weight	2.5kg
Sample Pedestal Material	Aluminum alloy and Quartz fiber
Operating Voltage	12V DC
Operating Power Consumption	12 - 18 W
Standby Power Consumption	5W
Software Compatibility	Windows 7, Windows XP

# UV Vis Spectrophotometer (Micro-volume)

## Introduction:

AE-BIO500 is a Micro-volume UV Vis Spectrophotometer and Nucleic Acid Analyzer designed for analyzing the concentration and pure of Nucleic Acid (DNA/RNA). Simply pipette 0.5~2ul sample onto the pedestal, laying down the sampling arm, AE-BIO500 can automatically complete the measurement within 5 seconds.

## Features:

- ✧ Direct, easy measurements in less than 5 seconds.
- ✧ Require only 0.5~2ul samples.
- ✧ No cells or cuvettes and no warm up.
- ✧ Optional data output via built-in printer, SD-RAM Card, USB memory.
- ✧ Touch screen and panel operation, without computer.
- ✧ No dilutions for samples.



## Technical Specifications:

Model	AE-BIO500
Order Code	AE-BIO500-B
Wavelength Range	230nm, 260nm, 280nm
Minimum Sample Size	0.5~2.0ul
Path Length	0.2mm (For high concentration measurement) 1.0mm (For ordinary)
Light Source	Xenon flash lamp
Absorbance Precision	0.003 Abs
Absorbance Range	0.02 - 80 (10 mm equivalent)
Detects Nucleic acid up to	10~5000ng/ul (dsDNA)
Detects Protein up to	0.1mg/ml~100mg/ml
Measurement Time	< 5s
Dimensions (W x D x H)mm	210 x 280 x 166
Sample Pedestal Material	Aluminum alloy and Quartz fiber
Operating Voltage	12V DC
Operating Power Consumption	12 - 18 W

# AE-S90 Series UV VIS Spectrophotometer

## Key Features:

- \* Double beam spectrophotometer with highly stable optics.
- \* Extremely versatile with full functionality from 190 to 1100nm.
- \* Variable spectral bandwidth 0.5, 1, 2, 4,5nm.
- \* 2 or 8 cell holder available.
- \* 6 inches LCD display & integrated user interface.
- \* USB port for data storage.
- \* ISO/CE Certificate passed.
- \* A & E Lab PC software included as standard.
- \* Extensive range of accessories available.



## Applications:

AE-S90 Series are wide screen double beam spectrophotometer. Its integrated design assures long term stability and durability. The highly stable optics and two detectors measure the sample and reference simultaneously optimising measurement accuracy. It has measurement modes for photometrics, concentration, multi-wavelength, spectrum scanning, kinetics, quantitation, DNA and protein analysis. The PC software is supplied as standard and offers additional functionality with preloaded methods for DNA and protein analysis, as well as extensive post-measurement tools, unlimited results saving and easy export of data.

The precisely aligned detector and quality deuterium and halogen lamps enhance the precision across the uv/vis spectrum starting from 190nm and into the near-infrared 1100nm. It is ideal for quality control, general research, pharmaceutical, biochemical and clinical laboratory applications.

## Ordering Information:

Order Code	Description
AE-S90-MD	Large screen, double beam, 2 single cell holder, Bandwidth: 0.5/1.0/2.0/4.0/5.0nm, with PC software.
AE-S90-1D	Large screen, double beam, 2 single cell holder, Bandwidth: 1nm, with PC software.
AE-S90-2D	Large screen, double beam, 2 single cell holder, Bandwidth: 1.8nm, with PC software.

## Technical Specifications:

Wavelength		Photometric	
Wavelength Range	190-1100nm	Accuracy	±0.3%T
Wavelength Accuracy	±0.3nm	Photometric Repeatability	0.2%T
Wavelength Repeatability	0.2nm	Photometric Display Range	-0.3-3A,0-200%T,0-9999C
Bandwidth	1nm/1.8nm/0.5,1,2,4,5nm	Stability	± 0.001A/h @ 500nm
Others		Baseline Flatness	±0.001A
Data Output Port	USB	Noise	±0.001A
Printer Port	Parallel Port	Stray Light	≤0.05%T @220nm, 360nm
Optical System	Double Beam (1200 lines/mm grating)		
Display	LCD (320x240 Dots )		
Lamps	Deuterium & Tungsten Halogen Lamp		
Detector	Silicon Photodiode		
Software	UV PC Software		
Power Supply	AC 220V/50Hz, 110V/60Hz.		
Packing Size & Weight	860x660x465mm & 35kg		

# AE-S80 Series UV Vis Spectrophotometer

## Key Features:

- \* Single beam spectrophotometer with highly stable optics.
- \* Extremely versatile with full functionality from 190 to 1100nm.
- \* Variable spectral bandwidth 0.5, 1, 2, 4,5nm.
- \* 2 or 8 cell holder available.
- \* 6 inches LCD display & integrated user interface.
- \* USB port for data storage.
- \* ISO/CE Certificate passed.
- \* A & E Lab PC software included as standard.
- \* Extensive range of accessories available.



## Applications:

AE-S80 series are large scanning uv vis spectrophotometer which combine best features of single beam spectrophotometer. They vary in bandwidth, wavelength accuracy and dimension. They provide excellent performance for measurements in the range of 190nm to 1100nm. All spectrophotometers features high performance sealed optics mounted on a stable machined platform.

AE-S80 series is ideal for quality control, general research, pharmaceutical, biochemical and clinical laboratory applications. Such as: quantitative analyses, kinetics, wavelength scanning, multiple components and DNA/Protein analysis, etc.

## Ordering Information:

Order Code	Description
AE-S80-MS	Large screen, single bean, 4 cell holder, Bandwith: 0.5/1.0/2.0/4.0/5.0nm, with PC software.
AE-S80-1S	Large screen, single beam, 4 cell holder, Bandwith: 1nm, with PC software.
AE-S80-2S	Large screen, single beam, 4 cell holder, Bandwith: 1.8nm, with PC software.

## Technical Specifications:

Wavelength		Photometric	
Wavelength Range	190-1100nm	Photometric Accuracy	±0.3%T
Wavelength Accuracy	±0.3nm	Photometric Repeatability	0.2%T
Wavelength Repeatability	0.2nm	Photometric Display Range	0-200%T, -0.3-3.0A, 0-9999C
Band Width	1nm/1.8nm/0.5,1,2,4,5nm	Stability	0.002A/h @ 500nm
<b>Others</b>		Baseline Flatness	±0.001A
Data Output Port	USB	Noise	±0.001A
Printer Port	Parallel Port	Stray Light	≤0.05%T @220nm, 360nm
Optical System	Single Beam (1200 lines/mm grating)		
Display	LCD (320X240 Dots )		
Detector	Silicon Photodiode		
Lamps	Deuterium & Tungsten Halogen Lamp		
Power Supply	AC 220V/50Hz, 110V/60Hz.		
Packing Size & Weight	860x660x465mm & 35kg		

# AE-S70 Series UV VIS Spectrophotometer

## Key Features:

- \* Single beam spectrophotometer with highly stable optics.
- \* Extremely versatile with full functionality  
UV range: 190 to 1100nm, VIS range: 320-1100nm.
- \* Spectral bandwidth 1.8 & 2nm.
- \* 6 inches & compact LCD display. Integrated user interface.
- \* USB port for data storage.
- \* ISO/CE Certificate passed.
- \* A & E Lab PC software available.
- \* Extensive range of accessories available.



**AE-S70-1U**

## Application:

AE-S70 Series spectrophotometers have the most attractive cost performance. It is widely used in colleges and enterprises for general quantitative analysis and experiments.

- \* The instrument use a lead screw structure so that the instrument wavelength accuracy and wavelength resolution can be greatly improved.
- \* 8mm thick optical base: the instrument use a rigid die-cost aluminum base as its optical mount to ensure instrument stability and reliability.
- \* It can set up various standard curves according to customer/s solutions and find the concentration of unknown solutions.

## Ordering Information:

Order Code	Description
AE-S70-1U	Large screen, single beam, 4 cell holder, 190-1100nm, Bandwidth: 1.8nm.
AE-S70-1UPC	Large screen, single beam, 4 cell holder, 190-1100nm, Bandwidth: 1.8nm., with PC software.
AE-S70-2U	Compact screen, single beam, 4 cell holder, 190-1100nm, Bandwidth: 2nm.
AE-S70-2UPC	Compact screen, single beam, 4 cell holder, 190-1100nm, Bandwidth: 2nm, with PC software.
<b>AE-S70 Series Visible Spectrophotometer</b>	
AE-S70-2V	LCD display, 320-1100nm, bandwidth: 2nm, wavelength accuracy: $\pm 0.5\text{nm}$ .
AE-S70-2VPC	LCD display, 320-1100nm, bandwidth: 2nm, wavelength accuracy: $\pm 0.5\text{nm}$ , with PC software.

## Technical Specifications:

Wavelength		Photometric	
Wavelength Range	UV Range: 190-1100nm Visible Range: 320-1100nm	Photometric Accuracy	$\pm 0.3\%T$
Wavelength Accuracy	$\pm 0.5\text{nm}$	Photometric Repeatability	0.2%T
Wavelength Repeatability	$\pm 0.3\text{nm}/\pm 0.2\text{nm}$	Photometric Display Range	0-200%T, -0.3-3.0A, 0-9999C
Band Width	1.8nm/2nm	Stability	0.002A/h @ 500nm
<b>Others</b>		Baseline Flatness	$\pm 0.002A/\pm 0.0015A$
Data Output Port	USB	Noise	$\pm 0.001A$
Printer Port	Parallel Port	Stray Light	$\leq 0.05\%T$ @220nm, 360nm
Optical System	Single Beam (1200 lines/mm grating)		
Display	LCD (320X240/128X64 Dots )		
Detector	Silicon Photodiode		
Lamps	Deuterium & Tungsten Halogen Lamp		
Power Supply	AC 220V/50Hz, 110V/60Hz		
Packing Size & Weight	680X590X420mm & 23kg		

# AE-S60 Series UV VIS Spectrophotometer

## Key Features:

- \* Single beam spectrophotometer with highly stable optics.
- \* Extremely versatile with full functionality from UV range 190-1000nm & VIS range: 325-1000nm.
- \* Spectral bandwidth 4nm.
- \* 2.5 inches LCD Display.
- \* USB port for data storage.
- \* ISO/CE Certificate passed.
- \* A & E Lab PC software available.
- \* Extensive range of accessories available.

## Application:

- \* Can display wavelength, absorption and transmittance with 5 results per screen. It also has a memory store of up to 200 results.
- \* It can set up various standard curves according to customer/s solutions and find the concentration of unknown solutions.
- \* Equipped with imported deuterium lamp which ensures low stray light, photometric accuracy and is easy to be replaced.
- \* Optional software UV-Professional can expand the applications to Spectrum scanning, kinetics and quantitative, etc.

## Functions:

- ❖ T Mode: Continuously measure the Transmittance of samples
- ❖ A Mode: Continuously measure the Absorbance of samples
- ❖ C Mode: Standard Curve method, can use at most 9 standard samples to create a new standard curve, and to measure the unknown samples by the new one.
- ❖ F Mode: Coefficient Method, Input the known K and C to measure the unknown concentration samples.

## Ordering Information:

Order Code	Description
AE-S60-2U	190-1000nm, Bandwidth: 2/4nm (optional)
AE-S60-2UPC	190-1000nm, Bandwidth: 2/4nm, with PC software.
AE-S60-4U	200-1000nm, Bandwidth: 4nm.
AE-S60-4UPC	200-1000nm, Bandwidth: 4nm, with PC software.
<b>AE-S60 Series Visible Spectrophotometer</b>	
AE-S60-4V	325-1000nm, Bandwidth: 4nm.
AE-S60-4VPC	325-1000nm, Bandwidth: 4nm, with PC software.

## Technical Specifications:

Wavelength		Photometric	
Wavelength Range	UV range: 190-1000nm VIS range: 325-1000nm	Photometric Accuracy	±0.5%T
Band Width	4nm	Photometric Repeatability	0.3%T
Wavelength Accuracy	±1nm	Photometric Display Range	0-200%T, -0.3-3.0A, 0-9999C
Wavelength Repeatability	0.5nm	Stability	0.002A/h @ 500nm
Wavelength Setting	Auto	Stray Light	≤0.3%T@220nm, 360nm
Data Output Port	USB		
Printer Port	Parallel Port		
Optical System	Single Beam (1200 lines/mm grating)		
Display	128x64 Dots LCD		
Detector	Silicon Photodiode		
Software	UV or VIS software		
Packing Size & Weight	550×420×280mm & 14kg		



**AE-S60-2U**

# AE-S50 Series Visible Spectrophotometer

## Key Features:

- \* Visible spectrophotometer with highly stable optics.
- \* Extremely versatile with full functionality from 325 to 1000nm.
- \* Spectral bandwidth 4nm.
- \* Integrated user interface.
- \* USB port for data storage.
- \* ISO/CE Certificate passed.
- \* Extensive range of accessories available.



## Functions:

- \* With microprocessor controlled, it can realize auto zero and auto 100% adjustment with one push-button.
- \* 1200 line grating which ensures high resolution, low stray light and high parameters accuracy.
- \* Equipped with USB port which can be connected to PC and edit data via software. Data can print while connect with a micro-printer.
- \* Four display mode: Absorption, transmittance, concentration and coefficient directly by different mode switching.
- \* Compact design, easy to carry.

## Ordering Information:

Order Code	Description
AE-S50-4V	Visible Spectrophotometer, 325-1000nm, Bandwidth: 4nm.

## Technical Specifications:

Wavelength		Photometric	
Wavelength Range	325-1000nm	Photometric Accuracy	±0.5%T
Band Width	4nm	Photometric Repeatability	0.3%T
Wavelength Accuracy	±2nm	Photometric Display Range	T. A. C. F
Wavelength Repeatability	1nm	Stability	0.002A/h @ 500nm
Data Output Port	USB	Stray Light	≤0.3%T@220nm, 360nm
Printer Port	Parallel Port		
Display	LED Display		
Lamp	Tungsten Halogen Lamp		
Detector	Silicon Photodiode		
Software	VIS software (Optional)		
Packing Size & Weight	550×420×280mm & 8kg		

# Flame Photometer



## Key Features:

- \* Dual channel, LCD display.
- \* Pre-selection of flame sizes;
- \* A flameout protection device;
- \* K and Na testing at the same time.

## Applications:

Flame Photometer is used for analyzing & measuring the content & concentration of K, Na elements.

- \* Testing cement, glass, ceramics, refractory materials and other construction materials;
- \* Testing fertilizers and soil;
- \* Testing products of mining, petroleum, metallurgy, and chemical products;
- \* Testing pharmaceutical, beverages and other food;

\* MSW testing;

\* Various laboratory tests for scientific research, health, education and other fields.

## Ordering Information:

Order Code	Description
AE-SFP40	With air-compressor.Measurement Range: K: 0-15, 0-40ug/mL; Na: 0-40, 0-80ug/mL.
AE-SFP60	With air-compressor. Measurement Range: K: 0-15, 0-40, 0-60ug/mL; Na: 0-40, 0-80, 0-120ug/mL.
AE-SFP100	With air-compressor, micro-printer or PC software. Measurement Range: K: 0-15, 0-40, 0-60, 0-100ug/mL; Na: 0-40, 0-80, 0-120, 0-160ug/mL.

## Technical Specifications:

Linearity Range	K: detection limit $\leq 0.004\text{mmol/L}$ ; Na: detection limit $\leq 0.008\text{mmol/L}$
Linearity Error	K: $\leq 0.005\text{mmol/L}(0.0100\sim 0.0800)\text{mmol/L}$ ; Na: $\leq 0.03\text{mmol/L}(0.0500\sim 0.400)\text{mmol/L}$ .
Repeatability	Conduct 7 consecutive independent tests for one standard solution, the relative standard deviation: $\leq 3\%$ .
Stability	Continuous sampling of standard solution, the biggest change in the relative volume in 15s: $\leq 3\%$ ; Test once every minute, and test 6 times in total, the biggest change in the relative volume: $\leq 15\%$ .
Response Time	Response time $< 8\text{s}$
Suction Jet of Samples	Suction jet of samples $< 6\text{mL/min}$
Dimension	380x770x570mm
Weight	18kg

# Flame Photometer

## Application:

This instrument is used for analyzing & measuring the content & concentration of elements (K, Na, Li, Ca, Ba). It can be widely applied to agriculture (soil, fertilizer, tobacco), industry (cement, glass, ceramics, mineral or ore powder, fireproof material), food (wine, water), laboratory, clinical experiments and pathology research (serum, urine, plasma), etc.

## Characteristics:

- ✧ With 5 channels and be able to detect K, Na, Li, Ca, Ba 5 elements. With K, Na, Li, Ca, Ba five filters, which can detect three kinds of elements, show three kinds of element content simultaneous.

- ✧ Operates on propane, butane or liquefied petroleum gas.
- ✧ Standard accessories: air-compressor, PC software or micro-printer.
- ✧ LCD Display, touch panel with numeric keypad.
- ✧ Single point calibration & calibration curve can be saved.
- ✧ RS232 interface, external computer or printer. With a mist separator.

## Ordering Information:

Order Code	Description
AE-SFP500	Measurement Range: K: 0-100ppm; Na: 0-100ppm; Li: 0-100ppm; Ca: 0-1000ppm; Ba: 0-3000ppm; Measurement Limit: K: 0.01ppm; Na: 0.01ppm; Li: 0.025ppm; Ca: 0.1ppm; Ba: 10ppm;
AE-SFP401	Measurement Range: K: 0-100ppm; Na: 0-100ppm; Li: 0-100ppm; Ca: 0-1000ppm; Measurement Limit: K: 0.01ppm; Na: 0.01ppm; Li: 0.025ppm; Ca: 0.1ppm;
AE-SFP402	Measurement Range: K: 0-100ppm; Na: 0-100ppm; Li: 0-100ppm; Ba: 0-3000ppm; Measurement Limit: K: 0.01ppm; Na: 0.01ppm; Li: 0.025ppm; Ba: 10ppm;
AE-SFP301	Measurement Range: K: 0-100ppm; Na: 0-100ppm; Li: 0-100ppm; Measurement Limit: K: 0.01ppm; Na: 0.01ppm; Li: 0.025ppm;
AE-SFP302	Measurement Range: K: 0-100ppm; Na: 0-100ppm; Ca: 0-1000ppm; Measurement Limit: K: 0.01ppm; Na: 0.01ppm; Ca: 0.1ppm;
AE-SFP200	Measurement Range: K: 0-100ppm; Na: 0-100ppm; Measurement Limit: K: 0.01ppm; Na: 0.01ppm;

## Technical Specifications:

Drift	≤ 3% (after 30 minutes when the instrument stability)
Sample Rate	4 ~ 6ml/min
Linearity	Better than the best results of the intermediate value of 2% (single-point CAL)
Response Time	< 8s
Time Stability	Less than 15 seconds (when the sample was taken after the flame)
Calibration Methods	Straight line, broken line, secondary fitting
Size & Weight	530X510X580mm & 27kg