PRODUCT VOLUME OF
MICRO SPECTROPHOTOMETER

Nano-500 Micro-spectrophotometer Product Introduction

Nano-500 is a improved micro-spectrophotometer based on Nano-300 with full wavelength (200-800 nm). It added a function of fluorescence and without requiring a computer. With a sample size of only 0.5 μL to 2 μL, the sample concentration can be rapidly and accurately detected.

The cuvette mode can be used to detect the concentration of culture media such as bacteria.The newly added fluorescence detection function, combined with the fluorescence quantitative analysis kit, can accurately quantify the concentration of DNA, RNA and protein through the specific combination of the fluorescent dye and the target substance, and the minimum limit can reach 0.5 pg/μL (dsDNA).

- Patented motor lifting structure to prevent liquid column fracture due to structural problems, increasing the detection stability
- Standard OD600 detection function
- Android system, 7-inch capacitive touch screen
- High-resolution CCD array detector, 6 s can complete detection and display results
- Long life pulse xenon lamp light source
- The detection data can be transferred to the computer through USB, which is convenient for data processing and analysis. The built-in printer can print the data directly

Nano-500: Perfect Fusion of Micro-detection and Fluorescence Detection

A

Add 0.05 mm optical path to make nucleic acid concentration detection up to 15000 ng/μL. The detection result is stable with the motor lifting structure.

B

Added fluorescence detection function, can accurately measure DNA samples below 5 ng/μL. With the corresponding detection kit, the detection limit can reach 0.5 pg/μL (dsDNA).

C

The automatic detection function is added, and the instrument automatically starts concentration detection when the detection arm is lowered, which greatly improves detection efficiency.

Micro-specrophotometer can quickly and accurately detect nucleic acid, protein and cell solution. Because it is easy to use, less sample consumption, no preheating, can quickly cleanup residual samples, no cuvettes or other sample positioning devices required, samples do not need to be diluted and other characteristics. It has become a routine instrument in many laboratories. During the test, users can directly add the sample point to the sample plate. After the test the sample can be directly erased or recovered.

Features

User-friendly software, easy to use

Graphical software operation, more intuitive interface, the results can be directly exported, easy to save, view and output data.

Micro-volumes measuring

Only 0.5 μL-2 μL sample is needed for each test. After the measurement, the samples can be recovered and the precious samples can be studied with confidence.

Fast detection

No dilution or cuvette needed in the detection process;
5 s can complete the test and display the result.

Long life light source, do not need to warm up

Xenon flash, life span is 10^9 (up to 10 years).
No preheating, direct use, ready to test in any time, no need for other consumables.

High concentration detection

The maximum concentration of the detectable sample is 15000 ng/μL (Nano-500, dsDNA as an example), and the sample basically does not need to be diluted.

Convenient and easy to use

Directly point the sample on to the sample plate without dilution or cuvette. The sample concentration can be measured as 50 times of the conventional uv-visible photometer, and the result can be directly output as the sample concentration.

Nano-500 added fluorometer mode, accurate quantitative nucleic acid concentration

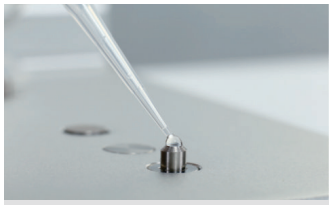
For samples with concentrations lower than 2 ng/μL, fluorometer mode can be selected and the minimum detection limit can be up to 0.5 pg/μL.

Single machine operation, convenient and efficient

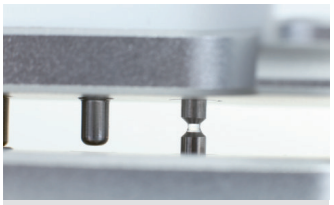
Nano-500 is full-wavelength micro-spec-trophotometer, and Nano-400A is a fixed wavelength ultra-micro nucleic acid analyzer.

Applications	
260 nm: dsDNA, ssDNA, RNA	595 nm: Bradford
280 nm: A280, BSA, IgG, Lysozyme	600 nm: Bacterial liquid concentration
562 nm: BCA	650 nm: Lowry

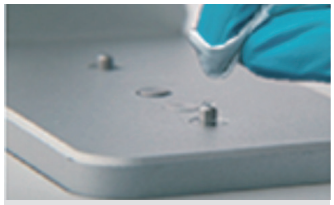
Operation Process



Adding sample



Measuring sample



Quick and easy cleaning

New Fluorescence Detection Function for Nano-500

Fluorescence detection combined with fluorescence quantitative analysis kit, able to accurately quantify the concentration of DNA, RNA and protein through the specific binding of fluorochrome with target material, and the minimum limit is 0.5 pg/μL (dsDNA). Nano-500 can be compatible with common fluorescence quantitative reagent to provide users with the maximum convenience and minimum detection cost.

Fluorescence Detection Mode (Can Be Customized)			
Model	Channel	Excitation wavelength	Emission wavelength
Nano-500U (optional)	UV	365±20 nm	420~480 nm (60 nm)
Nano-500 (standard)	Blue	460±20 nm	525~570 nm (45 nm)
Nano-500G (optional)	Green	525±20 nm	575~640 nm (65 nm)
Nano-500R (optional)	Red	625±20 nm	670~725 nm (55 nm)

Fluorescence Detection Mode - Specification	
Light source	LED
Dynamic range	5 orders of magnitude
Linear dynamic range	R^2 ≥0.995
Detector	Photodiode
Repeatability	≤1.5 %
Stability	≤1.5 %
Sensitivity	dsDNA: 0.5 pg/μL
Measurement speed	3 s (once)

Applications of Different Fluorescence Channels

Channel	Excitation wavelength	Common reagent	Application
UV channel	365±20 nm	Hoechst 33258, 4-MU, EnZCheK Caspase	Nucleic acid quantification, plant GUS reporter gene detection, apoptosis detection
Blue channel	460±20 nm	PicoGreen®, oligreen, RiboGreen®, GFP, Protein, Fluorescein	dsDNA, ssDNA, GFP, gene detection, fluorescein detection, protein quantification
Green channel	525±20 nm	Rhodamine, Cy3, RFP Vybrant Cytotoxicity	Rhodamine detection, Cy-3 fluorescence labeling detection, RFP gene detection, cytotoxicity detection
Red channel	625±20 nm	Cy5, Quant-iT RNA	Cy-5 fluorescence labeling detection, RNA quantification

Unique Advantages for Nano-500

In the process of sample detection, when the sample concentration is high or the sample is viscous, the determination by micro-spectrophotometer wil often result in tha failure of liquid column tension or even the direct fracture of liquid column, which will directly affect the results of detection. In addition, when the sample concentration is high, some tiny bubbles are easily generated in the sample. When these bubbles are in the detection light, the detection results are not stable.

Finally, because the stepper motor generates the liquid column in a gentler process, there wil be less loss in the detection of the liquid. If the customer's sample is very precious and needs to be recycled, stepper motor is more suitable for sample recovery. Nano-500 adopts the patented sample stretching technology and the optical path length accuracy reaches 1 μm, which effectively solves the above problems and makes the test results more stable and reproducible.

Specification

	Nano-500
Wavelength range	200~800 nm
Minimum sample size	0.5~2.0 μL
Path length	0.05 / 0.2 mm 1.0 mm
Light source	Xenon flash lamp
Detector type	2048-linear CCD array
Wavelength accuracy	1 nm
Spectral resolution	≤3 nm
Absorbance precision	0.003 Abs
Absorbance accuracy	1 % (7.332 Abs at 260 nm)
Absorbance range	0.04~300 A
Nucleic acid detection range	2~15000 ng/μL (dsDNA)
Measurement time	< 6 s
Dimension (W×D×H) mm	208×320×186
Weight	3.6 kg
Sample pedestal material	Aluminum alloy and quartz fiber
Operating voltage	DC 24 V 2 A
Operating power	25 W
Standby power	5 W
Software compatibility	Android system
Cuvette mode (OD600 measurement)	
Light source	LED
Wavelength range	600±8 nm
Absorbance range	0~4 A
Fluorometer mode	
Sensitivity	dsDNA: 0.5 pg/μL
Linear dynamic range	R^2 ≥0.995
Repeatability	≤1.5 %

Ordering Information

Code	Description
AS-11060-00	Nano-500 micro-spectrophotometer (standard), DC 24 V 5 W
AS-11070-00	Nano-500U micro-spectrophotometer (optional), DC 24 V 5 W
AS-11080-00	Nano-500G micro-spectrophotometer (optional), DC 24 V 5 W
AS-11090-00	Nano-500R micro-spectrophotometer (optional), DC 24 V 5 W