



Micro-spectrophotometer



HANGZHOU ALLSHENG INSTRUMENTS CO., LTD.

Micro-spectrophotometer

Introduction

Microspectrophotometer, can quickly and accurately detect nucleic acid, protein and cell solution. Because it is easy to use, less consumption of samples, no preheating, can quickly clean up residual samples, no need to compare the color dish or other sample positioning device, samples do not need to dilute and other characteristics. It has become a routine instrument in many laboratories. During the test, the sample is directly touched onto the sample. After the test, the sample can be directly erased or recovered.

Feature

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 0.5ul~2ul 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; 5s 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 15000ng/ul (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 onto 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.

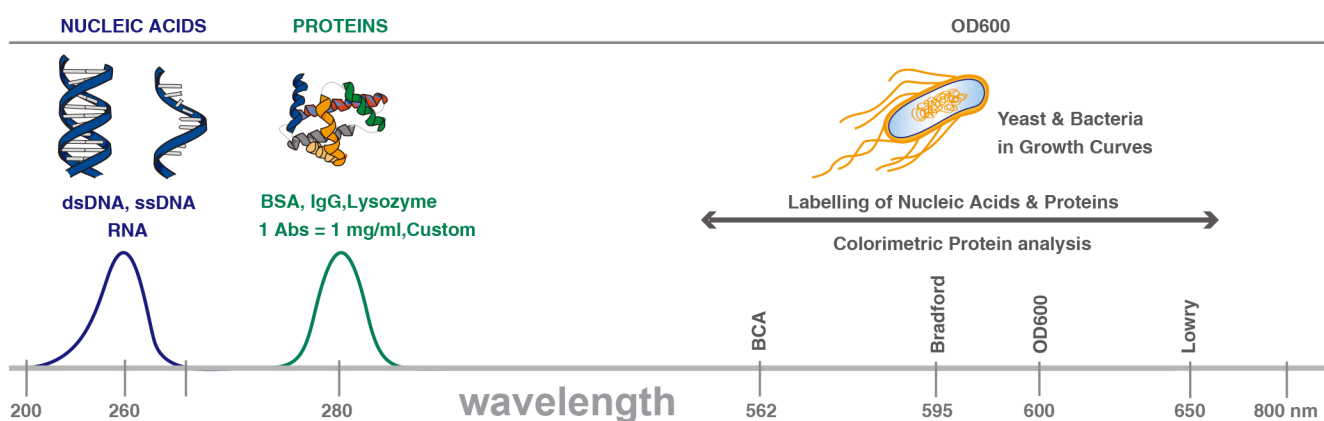
Nano-500 added fluorometer mode, accurate quantitative nucleic acid concentration

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

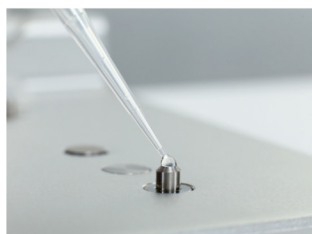
Single machine operation, convenient and efficient

Nano-100/ Nano-300 / Nano-500 is a full-wavelength microspectrophotometer, and Nano-400A is a fixed-wavelength ultra-micro nucleic acid analyzer.

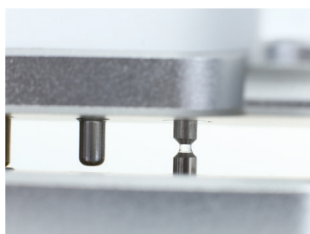
Applications



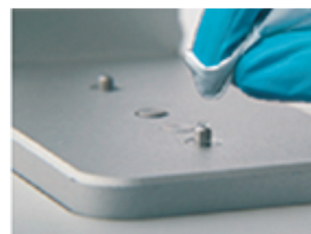
Easy Handling



Adding sample



Measuring sample



Quick and easy cleaning

Nano-100 microspectrophotometer

Introduction

The Nano-100 is a microspectrophotometer with full wavelength (200-800 nm). It can quickly and accurately detect the sample concentration. Because it is easy to use, less consumption of samples (only 2ul), no preheating, can quickly clean up residual samples, samples do not need to dilute and other characteristics, has become a routine instrument in many laboratories.

CE



Nano-100 microspectrophotometer

- Full wavelength (200-800 nm) microspectrophotometer.
- Direct detection of high concentration samples without dilution, maximum detection concentration up to 4500 ng/ul (dsDNA).
- High resolution CCD array detector, 5s can complete the detection, display the results.
- Need to connect PC computer to run detection, data saving, printing, sorting are very convenient.
- Long life pulse xenon lamp light source.

Nano-300 microspectrophotometer

Introduction

The Nano-300 is an improved microspectrophotometer based on Nano-100 with full wavelength (200-800 nm). It added a function of bacterium cell concentration detection (OD600) and without requiring a computer. It can not only measure the sample concentration rapidly and accurately like nano-100 only needs 2ul sample, but also equipped with the cuvette mode to measure the concentration of bacteria and other culture media, so as to estimate count the growth of bacteria. The Nano-300 uses a 7-inch capacitive touch screen and a customized android system to make it more efficient and convenient for life science experiments.

CE



Nano-300 microspectrophotometer

- Direct detection of high concentration samples without dilution, maximum detection concentration up to 4500 ng/ul (dsDNA).
- Android system, 7-inch capacitive touch screen, optimized APP software.
- Newly designed OD600 optical path detection system, new cuvette mode, for bacteria concentration detection.
- High resolution CCD array detector, 5s can complete the detection and display the results.
- Long life pulse xenon lamp light source.
- The built-in printer can print the report directly.

Nano-400A ultra-micro nucleic acid analyzer

Introduction

Nano-400A ultra-micro nucleic acid analyzer is an instrument used to detect the concentration and purity of DNA and RNA. The sample size required for each measurement is only 1.0 to 2ul. User can directly add the sample point to the template without coloring cup or capillary accessories.

CE



Nano-400A ultra-micro nucleic acid analyzer

- Ultra-micro nucleic acid analyzer with fixed wavelength (260nm, 280nm, 365nm).
- Android system, 7-inch capacitive touch screen, optimized APP software.
- LED light source, long life component.
- It is mainly used to detect the concentration and purity of nucleic acid, and to detect the concentration of nucleic acid at 260nm, the concentration of protein at 280nm. The 260/280 ratio is used to measure the purity.
- Newly designed OD600 optical path detection system, new cuvette mode, for bacteria concentration detection.
- 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 report directly.

Nano-500 microspectrophotometer

Introduction

The Nano-500 is a improved microspectrophotometer 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 0.5ul to 2ul, the sample concentration can be rapidly and accurately detected.

The cutteve 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 0.5pg/ul(dsDNA).

CE



Nano-500 microspectrophotometer

- The nano-500 adds the following functions on the basis of the nano-300:
 - A. Increase the optical path by 0.05mm to make the detection of nucleic acid concentration up to 15000ng/ul.
 - B. Fluorescence detection function is added to accurately determine the concentration of DNA samples below 5ng/ul. In the detection of double-stranded DNA, the detection limit can be up to 0.5pg/ul (equivalent to increasing the function of Fluo-100 fluorometer produced by our company).
 - C. Automatic detect after put down the arm.
- Patented motor lifting structure to prevent fluid column fracture due to structural problems, Increasing the detection stability.
- Standard OD600 detection function.
- Android system, 7-inch capacitive touch screen, optimized APP software.
- High resolution CCD array detector, 6s can complete the 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.

■ New fluorescence detection function for Nano-500

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



■ Specification

Light source	LED
Dynamic range	5 order of magnitudes
Linear Dynamic Range	R ² >0.995
Detector	Photodiode
Repeatability	<1.5%
Stability	<1.5%
Sensitivity	dsDNA: 0.5pg/ul
Measurement speed	3s(Once)

■ Application of different fluorescence channel

Channel	Excitation Wavelength	Common Reagent	Applications
UV channel	365±20nm	Hoechst 33258, 4-MU, EnZCheK Caspase	Nuclear acid quantification, Plant GUS reporter gene detection, apoptosis detection
Blue channel	460±20nm	PicoGreen®, oligreen, RiboGreen®, GFP, Protein, Fluorescein, Quant-iT™	dsDNA, ssDNA, RNA quantification, GFP gene detection, Fluorescein detection, Protein detection
Green channel	525±20nm	Rhodamine, Cy3, RFP Vybrant Cytotoxicity	Rhodamine detection, Cy-3 fluorescence labeling detection, RFP gene detection, Cell activity position detection
Red channel	625±20nm	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 microspectrophotometer will often result in the 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 will 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

Type	Nano-100	Nano-300	Nano-400A	Nano-500
Wavelength Range	200~800 nm	200~800 nm	260nm,280nm	200~800 nm
Minimum Sample Size	0.5~2.0µl	0.5~2.0µl	1.0~2.0µl	0.5~2.0µl
Path Length	0.2mm 1.0mm	0.2mm 1.0mm	0.5mm	0.05/0.2mm 1.0mm
Light Source	Xenon flash lamp	Xenon flash lamp	UV LED	Xenon flash lamp
Detector Type	2048-linear CCD array	2048-linear CCD array	UV-sillion Photocell	2048-linear CCD array
Wavelength Accuracy	1nm	1nm	----	1nm
Spectral Resolution	≤ 3 nm	≤ 3 nm	≤ 8 nm	≤3 nm
Absorbance Precision	0.003Abs	0.003Abs	0.005Abs	0.003Abs
Absorbance Accuracy	1% (7.332 Abs at 260 nm)	1% (7.332 Abs at 260 nm)	2% (7.332 Abs at 260 nm)	1% (7.332 Abs at 260 nm)
Absorbance Range	0.04 - 90 A	0.04 - 90 A	0.2 - 50 A	0.04 - 200 A
Nucleic acid detection range	2~4500ng/ul (dsDNA)	2~4500ng/ul (dsDNA)	10~2500ng/ul (dsDNA)	2~15000ng/ul (dsDNA)
Measurement Time	< 5s	< 5s	< 6s	< 6s
Dimension(W×D×H)mm	200 x 250x 166	210 x 268 x 181	208 x 280 x 186	208 x 310 x 186
Weight	2.6kg	2.8kg	2.0kg	3.6kg
Sample Pedestal Material	Aluminum alloy and Quartz fiber			
Operating Voltage	DC 24V 2A	DC 24V 2A	DC 24V 4A	DC 24V 2A
Operating Power	20 W	25 W	25 W	25 W
Standby Power	5W	5W	5W	5W
Software Compatibility	Win 7, Win XP, Win 8	Android System	Android System	Android System
OD600nm Measurement				
Light Source	----	LED	LED	LED
Wavelength Range	----	600±8nm	600±8nm	600±8nm
Absorbance Range	----	0~4A	0~4A	0~4A
Fluorescent detection				
Sensitivity	----	----	----	dsDNA: 0.5pg/ul
Linear Dynamic Range	----	----	----	R ² >0.995
Repeatability	----	----	----	<1.5%

■ Ordering information

Code	Description
AS-11010-00	Nano-100 Micro-spectrophotometer, DC24V 5W
AS-11020-00	Nano-300 Micro-spectrophotometer, DC24V 5W
AS-11050-00	Nano-400A ultra-micro nucleic acid analyzer, DC24V 5W
AS-11060-00	Nano-500 Micro-spectrophotometer, DC24V 5W



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