ALLSHENG

Micro-Spectrophotometer

Series Products

Nano-300 / 400A / 500

Nano-1000 / 8000



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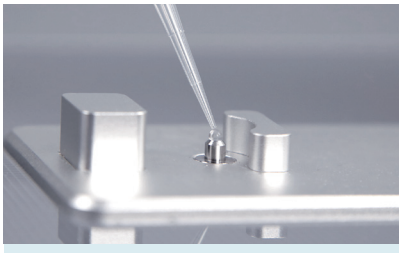
Micro-Spectrophotometer

Micro-spectrophotometer 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.

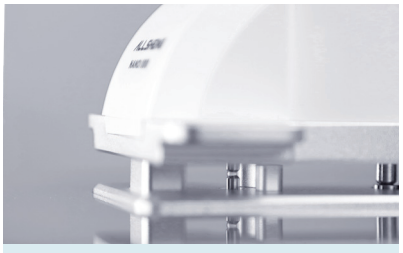
	Nano-1000	Nano-8000	Nano-300	Nano-500	Nano-400A
					
Wavelength range	190~1100 nm	190~1100 nm	200~800 nm	200~800 nm	260 nm, 280 nm
Nucleic acid testing dsDNA (ng/μL)	2~30000	2~11000	2~4500	2~15000	10~2500
A280 protein BSA (mg/mL)	0.1~900	0.1~330	0.1~135	0.1~450	0.5~75
Colorimetry	✓	✓	✓	✓	
Full-wavelength scanning	✓	✓	✓	✓	
OD600	✓	✓	✓	✓	✓
Fluorometer	✓	✓		✓	
Touch screen	✓	✓	✓	✓	✓
Automatic blank and detection	✓	✓	✓	✓	
Face recognition module (optional)	✓	✓			

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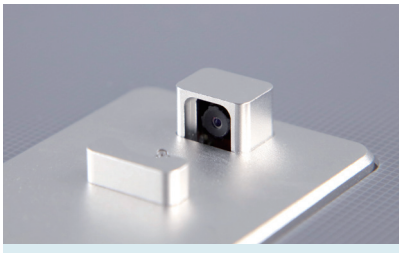
Operation Process



Adding sample



Measuring sample



Quick and easy cleaning

Nano-1000 / 8000

Nano-1000 / Nano-8000 micro-spectrophotometer provides UV / Vis absorbance detection of 190~1100 nm, with OD600 and single-tube fluorescence detection functions. The instrument is standard equipped with a 10-inch high-resolution touch screen, enabling quick viewing of test results without the need to connect a computer. An optional face recognition module is available to protect experimental data.

Nano-1000

- **Fast and Efficient**

  Ready to use after startup without warm-up required. Detection of single sample can be completed within 8s.

- **High Accuracy**

  Adopting a patented sample extension technology (patent No.: CN208013073U), it can accurately detect samples in a broad range of 2~30000 ng/μL (dsDNA), effectively eliminating unstable sample readings and ensuring accurate readings.

- **Micro-Detection**

  Only 0.5~2 μL of samples are required for each detection, and the samples can be recycled after detection, saving precious samples and ensuring reliable research.



Nano-8000

- **High-Throughput Detection**

  The patented 8-channel sample detection technology (Patent No.: CN116626006A) supports sample detection of 1~8 throughput.

- **Fast and Efficient**

  Ready to use after startup without warm-up required. Detection of 8 samples can be completed within 20s.

- **Precise Reading**

  Can accurately detect samples in the range of 2~11000 ng/μL (dsDNA).

- **Micro-Detection**

  Only 1~2 μL of samples are required for each detection, and the samples can be recycled after detection, saving precious samples and ensuring reliable research.



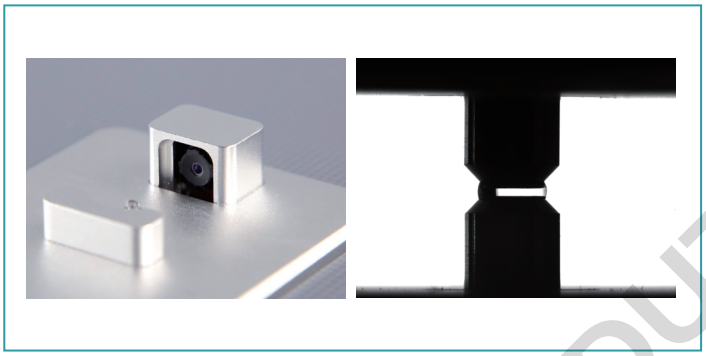
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Features



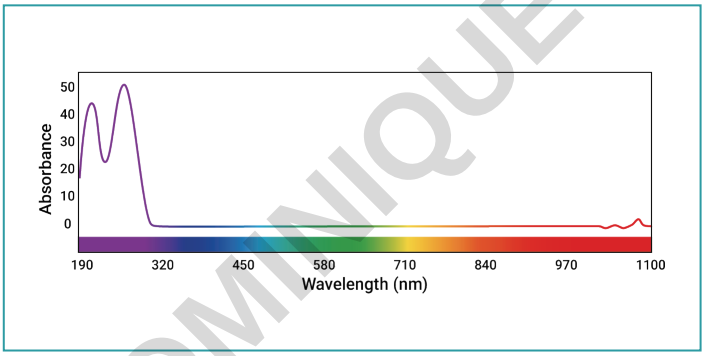
01 Easy to Operate

Equipped with a 10-inch adjustable-angle touch screen, the screen angle can be adjusted according to experimental operating habits. Graphical software operation with an intuitive interface. The integrated design does not require an external computer, saving valuable laboratory space.



02 Sample Monitoring

The instrument is equipped with a built-in camera that rapidly determines liquid column formation, ensuring reliable detection. When the purity ratio falls below requirements, the instrument automatically triggers an alarm and provides a prompt.



03 Broad-Range Spectral Detection

Provide UV / Vis absorbance detection of 190~1100 nm, enabling automated optical path switching or detection at specified wavelengths.



04 Face Recognition

Optional face recognition module enables strict control of operational permissions at the user access source, ensuring the security of experimental data collection, storage, and retrieval.

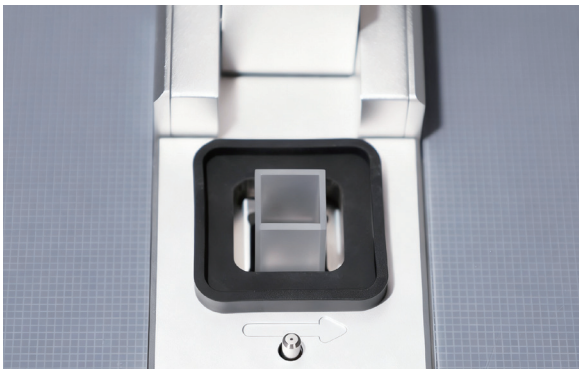
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05 Fluorometer Mode

The fluorometer mode can detect samples with concentrations below 2 ng/μL, with a minimum detection limit as low as 0.5 pg/μL. It enables precise quantification of nucleic acid and protein concentrations, and supports real-time kinetic monitoring of fluorescence intensity changes.

Standard-equipped blue fluorescence channel, excitation wavelength: 460±20 nm, emission wavelength: 525~570 nm (45 nm); optional red fluorescence channel, excitation wavelength: 625±20 nm; emission wavelength: 670~725 nm (55 nm).



06 Cuvette Function

The OD600 mode is compatible with slit cuvettes for measuring microbial concentration, saving valuable samples.



07 Flexible Export

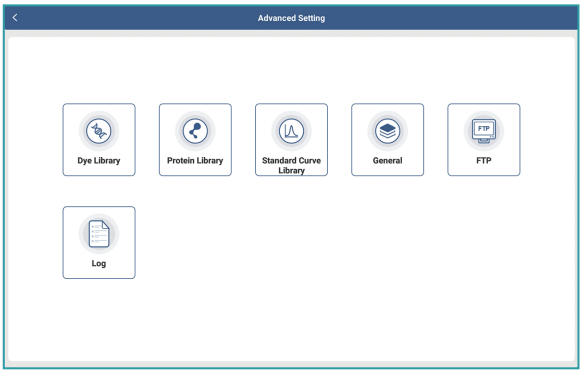
Experimental data can be exported to a computer via USB flash drive or printed directly using the built-in printer. Equipped with the FTP file transfer function, it supports real-time transmission of instrument data to local computers within the same local area network.



08 Precise Verification

The software is equipped with built-in verification and calibration functions, allowing users to verify or calibrate the instrument using performance verification solution according to specific requirements. Optional PVF-1 performance verification solution can be used for instrument verification, ensuring measurement accuracy and reliability.

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09 Application Storage

The instrument is equipped with built-in protein, dye, and standard curve libraries, enabling users to pre-store required information into the system. During operation, users can directly retrieve these presets without repeated setup, simplifying the workflow.

Application

Nucleic Acid Testing

Support quantitative analysis of dsDNA, ssDNA, Oligo DNA, RNA, Oligo RNA and primers, including probe concentration determination using fluorescent primer dyes. Results support spectral scanning and detailed absorbance, including A260, A280, and A230 absorbance values, as well as A260 / 280 and 260 / 230 ratio results.

Colorimetry Detection

Preset modes can be used for quantitative protein detection, including the BCA method, Bradford method, Lowry method, and Pierce 660 method. Results support spectral scanning, protein concentration, and absorbance at corresponding wavelengths.

OD600 Bacterial Concentration Detection

Measure the absorbance at 600 nm for bacterial cultures; suitable for slit cuvettes.

Protein Detection

A280 UV absorption method quantitatively detects proteins, antibodies, and peptides. Moreover, it enables user-defined extinction coefficient measurements for specific protein content. Results support spectral scanning and detailed absorbance values, including A260, A280 absorbance values, and A260 / 280 ratio results.

Fluorometer

It can detect fluorescence values, dsDNA, RNA, protein, kinetics, and Oligo. With built-in standard curves, users can easily calibrate the standard curves using the corresponding kits to measure samples. Results include sample fluorescence values and corresponding concentrations.

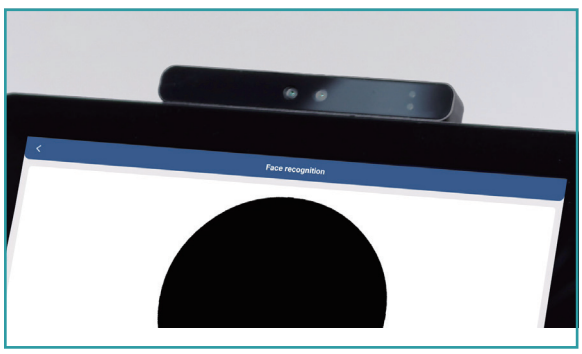
UV-Vis Spectral Scanning

It can detect micro-volume samples with characteristic absorption peaks between 190~1100 nm. Full-wavelength data can be exported to determine peak positions and absorbance values.

Optional Accessories



PVF-1 Performance Verification Solution



FRM-1 Face Recognition Module

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Specification

	Nano-1000	Nano-8000
Wavelength range	190~1100 nm	190~1100 nm
Sample consumption	0.5 μL~2 μL	1 μL~2 μL
Optical path	0.02 mm, 0.03 mm, 0.05 mm, 0.1 mm, 0.2 mm, 1 mm	0.1 mm, 0.2 mm, 1 mm
Detector	2048-pixel linear silicon CMOS array	2048-pixel linear silicon CMOS array
Wavelength accuracy	1 nm	1 nm
Wavelength resolution	≤1.6 nm (FWHM@Hg 253.652 nm)	≤1.6 nm (FWHM@Hg 253.652 nm)
Absorbance precision	0.003Abs (1 mm optical path)	0.003Abs (1 mm optical path)
Absorbance accuracy	±1% (7.332 Abs @260 nm)	±1% (7.332 Abs @260 nm)
Absorbance range	0.04~600Abs (@260 nm, equivalent to 10 mm)	0.04~220Abs (@260 nm, equivalent to 10 mm)
Nucleic acid detection range	2 ng/μL~30000 ng/μL (dsDNA)	2 ng/μL~11000 ng/μL (dsDNA)
Testing time	≤8s	≤20s (8 samples)
Data export	USB	USB
Material for sample pedestal	Aluminum alloy and quartz fiber	Aluminum alloy and quartz fiber
Input voltage	DC 24V 2A	DC 24V 2A
Power	25 W	25 W
Dimension	260×333×346 mm	260×333×346 mm
Weight	5.8 kg	6.6 kg
Software operation	Android system	Android system

OD600 Detection

Absorbance range	0~4.0Abs	0~4.0Abs
Absorbance stability	[0,3Abs)≤0.5%, [3,4Abs)≤2%	[0,3Abs)≤0.5%, [3,4Abs)≤2%
Absorbance repeatability	[0,3Abs)≤0.5%, [3,4Abs)≤2%	[0,3Abs)≤0.5%, [3,4Abs)≤2%
Absorbance accuracy	[0,2Abs)≤0.005Abs, [2,3Abs)≤1%, [3,4Abs)≤2%	[0,2Abs)≤0.005 Abs, [2,3Abs)≤1%, [3,4)≤2%

Fluorometer Mode

Linearity	R^2>0.995	R^2>0.995
Repeatability	<1.5%	<1.5%
Stability	<1.5%	<1.5%
Sensitivity	dsDNA: 0.5 pg/μL	dsDNA: 0.5 pg/μL

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Nano-500



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).

Features

- **Micro-Detection**

  Only 0.5~2 μL of samples are required for each detection, and the samples can be recycled after detection, saving precious samples and ensuring reliable research.

- **Fast and Efficient**

  Ready to use after startup without warm-up required. Detection of single sample can be completed within 6s.

- **Comprehensive Functions**

  Nano-500 is equipped with a fluorometer and OD600 measurement functions, meeting multiple detection needs, with efficient and convenient operation.

- **High Accuracy**

  Patented motor lifting structure to prevent liquid column fracture due to structural problems, increasing the detection stability. Can accurately detect samples in the range of 2~15000 ng/μL (dsDNA).

- **Easy Export**

  The test data is transferred to the computer via USB for easy sorting and analysis. The built-in printer can print the report directly.

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.



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)

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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

Nano-300

Nano-300 is a micro-spectrophotometer with full wavelength (200~800 nm). It added a function of bacterirum cell concentration detection (OD600) and without requiring a computer. It can not only measure the sample concentration rapidly and accurately with only 2 μL 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. 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.



Features

- **Fast and Efficient**

  Ready to use after startup without warm-up required. Detection of single sample can be completed within 5s.

- **No Dilution Required**

  Nano-300 maximum detection concentration is up to 4500 ng/μL (dsDNA). Direct detection of high concentration samples without dilution.

- **Micro-Detection**

  Only 0.5~2 μL of samples are required for each detection, saving precious samples and ensuring reliable research.

- **Comprehensive Functions**

  The newly designed OD600 optical path detection system with a new cuvette mode makes it easier to measure the concentration of culture media for bacteria, microorganisms, and other samples.

- **Easy Export**

  The test data is transferred to the computer via USB for easy sorting and analysis. The built-in printer can print the report directly.

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Nano-400A

Nano-400A micro-spectrophotometer 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 2 μL. User can directly add the sample point to the sample plate without accessories such as cuvettes or capillaries.



Features

- **Fixed Wavelength**

  Nano-400A is a micro-spectrophotometer with fixed wavelength (260 nm, 280 nm, 365 nm) and can detect samples in the range of 2~2500 ng/μL (dsDNA).

- **Easy Export**

  The test data is transferred to the computer via USB for easy sorting and analysis. The built-in printer can print the report directly.

- **Comprehensive Functions**

  The newly designed OD600 optical path detection system with a new cuvette mode makes it easier to measure the concentration of culture media for bacteria, microorganisms, and other samples.

- **Easy to Use**

  7-inch capacitive touch screen, no computer connection required.

Specification

	Nano-500	Nano-300	Nano-400A
Wavelength range	200~800 nm	200~800 nm	260 nm, 280 nm
Minimum sample size	0.5~2.0 μL	0.5~2.0 μL	1.0~2.0 μL
Path length	0.05 / 0.2 mm 1.0 mm	0.2 mm 1.0 mm	0.5 mm
Light source	Xenon flash lamp	Xenon flash lamp	UV LED
Detector type	2048-linear CCD array	2048-linear CCD array	UV-silicon photocell
Wavelength accuracy	1 nm	1 nm	--
Spectral resolution	≤3 nm	≤3 nm	≤8 nm
Absorbance precision	0.003 Abs	0.003 Abs	0.005 Abs
Absorbance accuracy	1% (7.332 Abs at 260 nm)	1% (7.332 Abs at 260 nm)	2% (7.332 Abs at 260 nm)
Absorbance range	0.04~300 A	0.04~90 A	0.2~50 A
Nucleic acid detection range	2~15000 ng/μL (dsDNA)	2~4500 ng/μL (dsDNA)	10~2500 ng/μL (dsDNA)
Measurement time	<6s	<5s	<6s

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	Nano-500	Nano-300	Nano-400A
Sample pedestal material	Aluminum alloy and quartz fiber	Aluminum alloy and quartz fiber	Aluminum alloy and quartz fiber
Operating power	25 W	25 W	25 W
Standby power	5 W	5 W	5 W
Operating voltage	DC 24 V 2 A	DC 24 V 2 A	DC 24 V 2 A
Software compatibility	Android system	Android system	Android system
Weight	3.6 kg	2.8 kg	2.0 kg
Dimension (W×D×H)	208×320×186 mm	210×265×181 mm	208×280×186 mm

Cuvette Mode (OD600 Measurement)

Light source	LED	LED	LED
Wavelength range	600±8 nm	600±8 nm	600±8 nm
Absorbance range	0~4 A	0~4 A	0~4 A

Fluorometer Mode

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	3s (once)	--	--

Ordering Information

Code	Product description
AS-11090-00	Nano-1000 micro-spectrophotometer (standard)
AS-11100-00	Nano-8000 micro-spectrophotometer (standard)
AS-11110-00	Nano-1000R micro-spectrophotometer (optional)
AS-11120-00	Nano-8000R micro-spectrophotometer (optional)
AS-11091-01	PVF-1 performance verification solution
AS-11091-02	FRM-1 face recognition module
AS-11020-00	Nano-300 micro-spectrophotometer, DC 24 V 5 W

Code	Product description
AS-11050-00	Nano-400A micro-spectrophotometer, DC 24 V 5 W
AS-11021-01	Cuvette (for OD600 measurement)
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

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HANGZHOU ALLSHENG INSTRUMENTS CO., LTD.

Building 9 No.7 of Zhuantang Science and Technology Economic Zone,
Xihu District, Hangzhou City, 310024 Zhejiang, P.R. China

Tel: +86-571-88859758 Fax: +86-571-87205673

info@allsheng.com www.allsheng.com

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