

# Micro-Spectrophotometer Nano-100

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**Nano-100**

## Description

**1. User-friendly software, easy to use**

It is easy to use, free software updates are available

**2. Micro-volumes measuring**

Only require 0.5~2 $\mu$ l sample to accurately determine nucleic acids, proteins

**3. Fast and easy measurements**

Turn on and instantly measure without lamp warm up time; Easy measurement within 8 sec

**4. Long life's Xenon flash lamp**

Xenon flash lamp, 10 flashes, up to 10 years, no dilutions and expensive consumables

**5. No consumables required**

Direct microvolume measurements from 1–2 $\mu$ L of sample. Eliminates the need for expensive accessories

**6. No computer required and with touch screen (Nano-300, Nano-400A, Nano-500)**

Nano-300, Nano-400A, Nano-500 is equipped with Android system operation

**7. The Nano-100 / Nano-300 / Nano-500 are full range of wavelength (200-800nm) detection ability; The Nano-400A is a basic UV spectrophotometer specifically designed (only two types of wavelength 260nm and 280nm) for nucleic acids and proteins**

**8. Nano-500 also can be used to test the Fluorescence**

For samples with concentrations below 2 ng/ $\mu$ l, fluorometric mode can be used, and the minimum detection limit can reach 0.5pg/ $\mu$ l

# Micro-Spectrophotometer Nano-500

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## NANO-100 Highlights

1. Turn on and instantly measure without lamp warm up time; Full scan capability from 200-800nm within 5 sec.
2. Detects Nucleic Acids up to 4500ng/ul (dsDNA)
3. 3864-Element linear silicon CCD array
4. Need to connect computer
5. Software compatibility: WinXP, Win7, Win8



OD600 detection

# Micro-Spectrophotometer Nano-500

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### 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/u(dsDNA). Nano-500 can be compatible with common fluorescence quantitative reagent to provide users with maximum convenience and minimum detection cost.



### Fluorescence mode

Code	Light	Excitation Filters	Emission Filters
Nano-500U (optional)	UV	365±20nm	420-480nm (60nm)
Nano-500 (standard)	Blue	460±20nm	525-570nm (45nm)
Nano-500G (optional)	Green	525±20nm	575-640nm (65nm)
Nano-500R (optional)	Red	625±20nm	670-725nm (55nm)

### Specification

Light source	LED
Dynamic range	Five orders of magnitude
Linear Dynamic Range	R <sup>2</sup> >0.995
Detector	Photodiode
Repeatability	<1.5%
Stability	<1.5%
Sensitivity	dsDNA: 0.5ng/ml
Measurement speed	3s (Once)

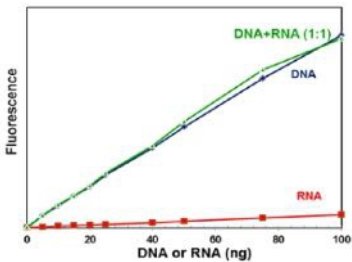
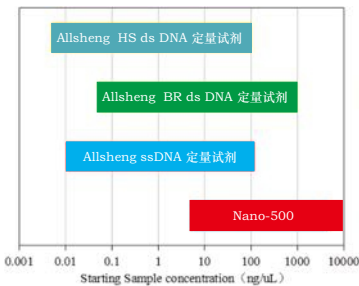
### Application of different fluorescence channel

Channel	Excitation Filters	Normal kits	Applications
UV channel	365±20nm	Hoechst 33258, 4-MU, EnZCheK Caspase	Nuclear acid quantification, Plant GUS reporter gene detection, Poptosis 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

### Fluorescence detection features

Fluorescence detection is able to precise quantification the concentration of DNA, RNA, protein with the high sensitive fluorescence analysis kits. The related fluorochrome could be emission the optical wave which waveband is larger than absorbing light, only when combined with the target molecule in the sample, after absorbed a certain optical wave, to quantify the intensity of this fluorescent. Then, confirm the target material contents according to the standard curve

Compare to the Nano-300, added function of fluorescence detection is available to increase the lower limit (see the left draw) of sample detection. In addition, even there is the RNA existing in the sample when doing the DNA detection, the fluorescence still with the strong specificity (see the right draw)



# Micro-Spectrophotometer Nano-500

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### Nano-300 and Nano-500 Capabilities

1. Wide spectral range (200-800nm) for measuring a variety of samples types:
  - A. DNA and RNA (260nm)
  - B. Purified protein (280nm)
  - C. Industrial dyes (490nm)
  - D. Gold nanoparticles (520nm)
  - E. Colorimetric protein assays (BCA 562nm, Branford 595nm Modified Lowry 650nm)
  - F. Optical Density measurements (OD600)
3. 2048-Element linear silicon CCD array
4. To calculate sample purity ratios: A260/A280, A260/A230
5. User-friendly software includes custom methods and data export capabilities



■ Adding sample

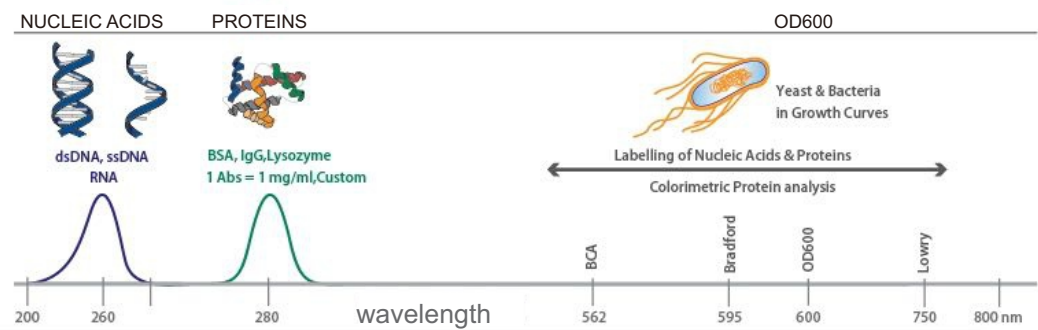


■ Measuring sample



■ quick and easy cleaning

### Applications



### Ordering information

No.	Description
AS-11060-00	Nano-500 Micro-Spectrophotometer, DC24V 5W (Standard)
AS-11070-00	Nano-500U Micro-Spectrophotometer, DC24V 5W (Optional)
AS-11080-00	Nano-500G Micro-Spectrophotometer, DC24V 5W (Optional)
AS-11090-00	Nano-500R Micro-Spectrophotometer, DC24V 5W (Optional)

# Micro-Spectrophotometer Nano-500

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Specification				
Type	Nano-100	Nano-300	Nano-400A	Nano-500
Wavelength Range	200-800nm	200-800nm	260nm, 280nm	200-800nm
Minimum Sample Size	0.5-2.0µl	0.5-2.0µl	1-2.0µl	0.5-2.0µl
Path Length	0.2mm 1.0mm	0.2mm 1.0mm	0.5mm	0.05mm 0.2mm 1.0mm
Light Source	Xenon flash lamp	Xenon flash lamp	UV LED	Xenon flash lamp
Detector Type	3864-Linear CCD array	2048-Linear CCD array	UV-sillion photocell	2048-Linear CCD array
Wavelength Accuracy	1nm	1nm	—	1nm
Spectral Resolution	≤3nm (FWHM at Hg546nm)	≤3nm (FWHM at Hg546nm)	—	≤3nm (FWHM at Hg546nm)
Absorbance Precision	0.003Abs	0.003Abs	0.005Abs	0.003Abs
Absorbance Accuracy	1% (7.332Abs at 260nm)	1% (7.332Abs at 260nm)	1% (7.332Abs at 260nm)	1% (7.332Abs at 260nm)
Absorbance Range	0.02 - 90A	0.02 - 100A	0.02 - 80A	0.02 - 100A
Detects Nucleic Acid up to	2-4500ng/ul (dsDNA)	2-5000ng/ul (dsDNA)	10-4000ng/ul (dsDNA)	2-15000ng/ul (dsDNA)
Measurement Time	<8S	<5S	<8S	<6S
Data Output	Connect PC	USB	USB	USB
Sample Pedestal Materia	Aluminum alloy and Quartz fiber			
Operating Voltage	24V DC	24V DC	24V DC	24V DC
Operating Power	20W	25W	25W	25W
Standby Power	5W	5W	5W	5W
Dimension (W x D x H)mm	200 x 250 x 166	210 x 268 × 181	210 x 280 x 181	210 x 310 × 181
Weight	2.6kg	2.8kg	3.5kg	2.8kg
Software Compatibility	WinXP, Win7, Win8	Android System	Android System	Android System
Fluorescent detection				
Sensitivity	—	—	—	dsDNA: 0.5pg/ul
Linear Dynamic Range	—	—	—	R <sup>2</sup> >0.995
Repeatability	—	—	—	<1.5%
OD600nm Measurement				
Light Source	—	LED	LED	LED
Wavelength Range	—	600±8nm	600±8nm	600±8nm
Absorbance Range	—	0-4A	0-4A	0-4A

Ordering information		
No.	Code	Description
01	AS-11010-00	Nano-100 Micro-Spectrophotometer, DC24V 5W
02	AS-11020-00	Nano-300 Micro-Spectrophotometer, DC24V 5W
03	AS-11050-00	Nano-400A Micro-Spectrophotometer, DC24V 5W
04	AS-11021-01	Cuvette for Nano-300, Nano-400A and Nano-500