OPTOSKY Spectroscopy Solutions

Datasheet

Micro-spectrophotometer | Nanobio-500

Features

- 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,6s 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.

Application

- Nucleic acid quantification, plant GUS reporter gene detection, apoptosis detection.
- dsDNA, ssDNA, GFP, gene detection, fluorescein detection, protein quantification.
- Rhodamine detection, Cy-3 fluorescence labeling detection, RFP gene detection, cytotoxicity detection.
- Cy-5 fluorescence labeling detection, RNA quantification.

Description

Nanobio-500 is a improved micro-spectrophotometer based on Nanobio-300 with full wavelength (200-800 nm). It added a function of fluorescence and without requiring a computer. With a sample size of only 0.5μL.to 2μL, 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. (ds DNA).

Model	Feature
Nanobio-500	Fluorescence detection, comparison cell mode, DNA, RNA, protein concentration detection

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Fluorescence Reagents and Applications

Channel	Excitation wavelength	Application
UV channel	365±20 nm	Nucleic acid quantification, plant GUS reporter gene detection, apoptosis detection
Blue channel	460±20 nm	dsDNA, ssDNA, GFP, gene detection, fluorescein detection, protein quantification
Green channel	525±20 nm	Rhodamine detection, Cy-3 fluorescence labeling detection, RFP gene detection, cytotoxicity detection
Red channel	625±20 nm	Cy-5 fluorescence labeling detection, RNA quantification

Parameter

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

Selection guide

	Nanobio-300	Nanobio-200	Nanobio-500
Wavelength range	200~800 nm	200~800 nm	260 nm, 280 nm
Nucleic acid test dsDNA (ng/μL)	2~4500	2~15000	10~2500
A280 protein BSA (mg/mL)	0.1~135	0.1~450	0.5~75
Colorimetry	●	●	
Full wavelength scan	●	●	
OD600	●	●	●
Fluorometer		●	
Touch screen	●	●	●

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1. Performance

	Nanobio-300	Nanobio-200	Nanobio-500
Wavelength range	200~800 nm	260 nm, 280 nm	200~800 nm
Minimum sample size	0.5~2.0 μL	1.0~2.0 μL	0.5~2.0 μL
Path length	0.2 mm 1.0 mm	0.5 mm	0.05 / 0.2 mm 1.0 mm
Light source	Xenon flash lamp	UV LED	Xenon flash lamp
Detector type	2048-linear CCD array	UV-silicon photocell	2048-linear CCD array
Wavelength accuracy	1 nm	----	1 nm
Spectral resolution	≤ 3 nm	≤ 8 nm	≤3 nm
Absorbance precision	0.003 Abs	0.005 Abs	0.003 Abs
Absorbance accuracy	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	0.2~50 A	0.04~300 A
Nucleic acid detection range	2~4500 ng/μL (dsDNA)	10~2500 ng/μL (dsDNA)	2~15000 ng/μL (dsDNA)
Measurement time	< 5 s	< 6 s	< 6 s
Dimension (W×D×H) mm	210×268×181	208×280×186	208×320×186
Weight	2.8 kg	2.0 kg	3.6 kg
Sample pedestal material	Aluminum alloy and quartz fiber	Aluminum alloy and quartz fiber	Aluminum alloy and quartz fiber
Operating voltage	DC 24 V 2 A	DC 24 V 2 A	DC 24 V 2 A
Operating power	25 W	25 W	25 W
Standby power	5 W	5 W	5 W
Software compatibility	Android system	Android system	Android system

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