SP-3000DB

Double Beam UV-VIS Spectrophotometer

SP-3000DB

Use SP-3000DB and you will find it more useful beyond your expectation.



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OPTIMA®

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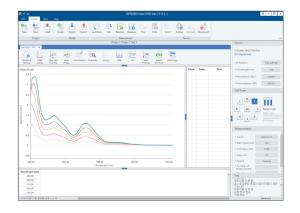
Auto Zero

550.00

SP-3000DB UV-VIS SPECTROPHOTOMETER

Experience faster and more convenient SP-3000DB.

OPTIVIEW (PC Software) - optional





One-touch Cell Holder Cover •-

One-touch type cell holder can easily be opened and closed.

Log-in management Function •-Can protect device and measuring

data safely through Log-in management Function using by ID and Password.

Network Printer Support o-

Data can be printed out by connecting to the main unit without installing a printer driver.

Remote Control o-

Incredible Speed

Sensuous Design

OPTIVIEW can easily analyze data, using fast result value acquisition and post-processing functions.

up to 1.5 times that of existing products.

Fast and flexible software delivers the best result with analytical speeds

Now, you can enjoy a greater level of pleasure with a sensuous design.

User Convenience

All functions of existing PC software are installed in SP-3000DB, making it faster and more convenient.

Extensive Scalability

SP-3000DB is designed for high-precision/high-resolution measurement in widebands from ultraviolet to visible light and can be used in various applications.

Compact Size

Compact SP-3000DB enhances the efficiency of the experimental space.

After Sales Service Support Policy

OPTIMA® provides systematic services based on professional technology to support the various requirements of customers.

1 de

Warranty Service

We provide repair and replacement services free of charge for products purchased within one year and lamp failures occurring within the warranty life. We are striving to provide stable performance based on systematic and continuous services and experiences.

Installation of a Powerful Controller

Equipped with an Intel(R) Celeron(R) Quad Core Processor N3160 it includes a 32GB default storage capacity and data backup using USB memory.

• 8-inch Color Touch Screen LCD

Delivers rich visual information with a highresolution color screen. Convenience has been improved by applying a touch screen.



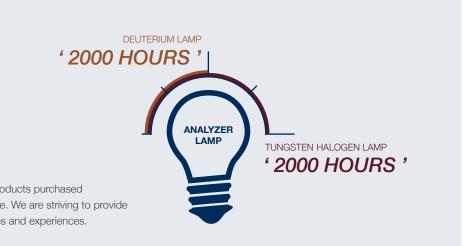
USB 4-port Installation and Support

SP-3000DB supports up to 4 USB ports, allowing various peripheral devices to be connected.

Multi-cell Holder as Standard More samples can be automatically measured with the built-in multi-cell holder as standard.

-• Compatibility

Various types of accessories such as Flow Cell, Peltier, and Sipper can easily be used.





BEST VISUAL AND FUNCTIONAL EXPERIENCE

SP-3000DB has an intuitive interface that allows accurate data measurement and analysis with a single touch, focusing on user convenience. The measurement results are also easy to be edited and exported.



You can always check measured values in real time. * [AUTO ZERO] Quick button provided.

Volume Control Function

The volume can be adjusted to suit the laboratory environment.

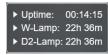
Help



Quick Cell Type Selection

Measurement monitoring is possible by selecting a cell type without entering the mode. The icon of the cell type in the quick menu changes according to the cell type status or position, so that the current status of the cell can be easily checked.

Mb, M7, M6, M5, M4, M3, M2, and M1: display of the cell position m, µ, n, and s: display of the current cell type status



Lamp Preheating Status Check Function

You can check the operating time of the equipment, the preheating status of the lamp and the cumulative operating time in real time and measure in the optimal status*.

Before lamp preheating, the icon is displayed in vellow. After lamp preheating (1 hour), the icon is displayed in green (*) The equipment can be measured and operated immediately without preheating.

SP	-3000DB	* 8	Auto Zero	550.00	0.0000 A	© °	● MB	Ľ
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Ph	otometric Mode(Sing	lle)						
Qu	antitation Mode			_				
Sp	ectrum Mode							
				Sp	pectrum		Kir	netics
	Select	Delete	•		Setup		PC Lin	k

Favorite

By registering the information that is being measured or analyzed, or has been completed, you can easily and quickly call up the information to perform tasks.

Setting

You can change the basic information, network,

as calibration of the equipment.

event, and system settings of the equipment as well

Provision of Data Security

Measured data are saved in the extended memory by default to prevent data loss due to equipment damage. They can also be saved in an external device by using the backup function.

Touch Graph Zoom-In/Out

By providing a drag-select method, it is possible to set a magnification range, and the user can easily enlarge the desired section. The auto-scale function is implemented.

SP-3000DB can directly measure from the instrument or remotely from extended memory and USB, the a PC. In a network environment, analysis results can be viewed on a such as switching data, applying PC without a limit of work space.

Provision of Useful Control Mode Convenient Data Management

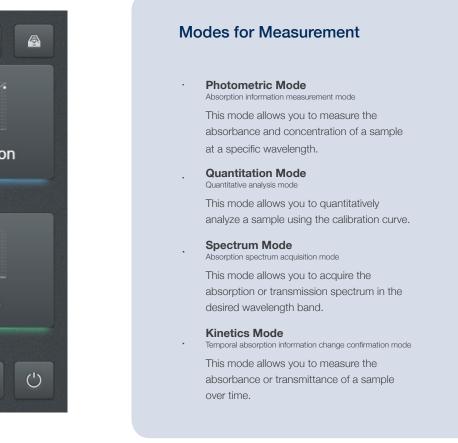
By storing data in the user can perform various tasks special conversion expressions and exporting to Excel in PC.

BIT(Built-In-Test) Wave motor Cell motor Tungsten lamp Deuterium lamp p

When the power is turned on, a self-test is performed to determine if there are any problems within the device. During the initial self-test, the CPU & ROM, drive of each motor, lamp and calibration status are checked to determine if there are any problems within the device. Each item is checked, and the result is displayed to maintain the best condition at all times.



You can check the explanations and precautions for using the functions (features) of the program.



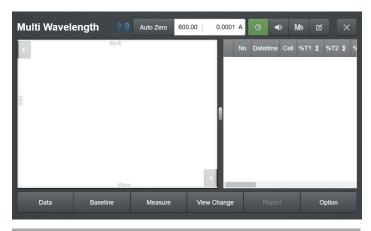
PC-Link

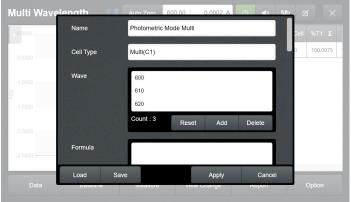
By changing mode of the equipment to remote mode, you can use it by direct link to a PC through OPTIVIEW.

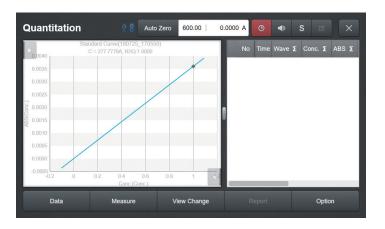
Provision of Built-In-Test (BIT)

Self-test Items

CPU & Memory Wave Motor Cell Motor Filter Motor Lamp Motor Tungsten Lamp Deuterium Lamp







Photometric Mode

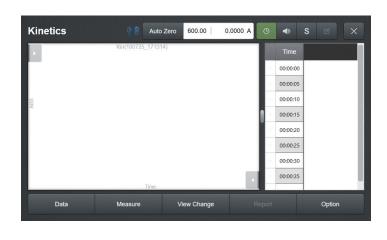
- In this mode, the absorbance (Abs) (or transmittance (%T)) at a specific wavelength can be easily measured.
- The factor (K) value can be set to allow a simple quantitative test (C = $K \times A$) on a sample to be performed making it possible for absorbance (Abs) measurement.
- Up to 8 wavelengths can be set, and the absorbance at each wavelength is measured automatically.
- Automatic analysis for up to 7 samples is possible using the multi-cell holder.



- · It is a mode that can measure and manage the calibration curve by utilizing the multi-cell holder.
- Quantitative analysis for a sample of interest can be performed using a calibration curve made by up to 7 concentrations of the sample.
- Four types of calibration curves including linear (zero-crossing), linear, quadratic, and cubic types are provided.
- Accurate calibration curve can be created with the values measured repeatedly for a maximum of 5 times.









Calibration Manager

The calibration manager allows the user to use the standard curve to select, create, modify, delete, import and export external quantitation mode files from the external storage, etc.



Spectrum Mode

- This mode allows the user to check the spectrum of the desired wavelength band.
- Absorbance (Abs) and transmittance (%T) data can be switched using a shortcut key.
- Automatic spectrum analysis for up to 7 samples (excluding the reference sample) is possible.
- This mode includes the functions to zoom in the section and to find the Peak/Valley location of the spectrum.



Kinetics Mode

- This mode allows the user to check the change in absorbance (or transmittance) over time at a specific wavelength.
- This mode is measured at regular intervals, and the minimum interval that can be set is for 1 second.
- This mode's progresses during the measurement is displayed, and 24-hour measurement is possible.
- The changes in the absorbance of 7 samples can be obtained automatically.

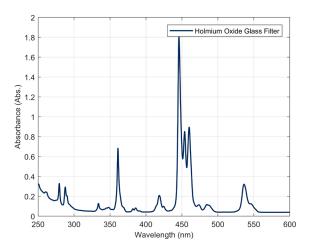
Report & Print

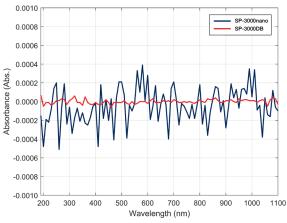
You can check the data measured at each mode in a report format or print them out. Moreover, you can select the items to be included through the Report Option and print out only the necessary information.

THE UNCOMPROMISING

PERFORMANCE

SP-3000DB is designed as a double beam type, providing high wavelength accuracy and repeatability.





Wavelength accuracy & repeatability

We guarantee wavelength accuracy as <± 0.3 nm and wavelength reproducibility as <± 0.1 nm at all Wavelength range.

Spectra and peak results were obtained using NIST traceable Holmium Oxide Glass filters.

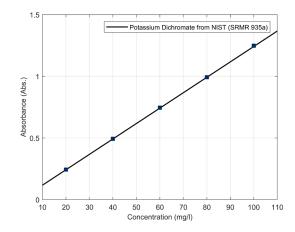
Specified Value (nm)	279.35	360.85	453.60	536.40
Measured value (nm)	279.45	361.05	453.75	536.30
Judgement	PASS	PASS	PASS	PASS

Baseline Flatness

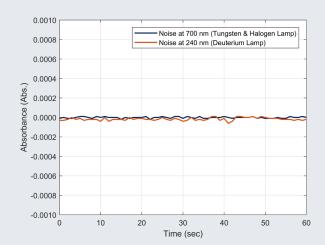
SP-3000DB offers high Baseline Flatness at all Wavelength range.

Baseline Flatness (190 – 1100)

Measured value	Tolerance
P-P: 0.00002 Abs	<± 0.0005 Abs



No.	Absorbance of blank solution (Abs)
1	0.00000
2	0.00000
3	-0.00002
4	-0.00002
5	-0.00001
6	-0.00001
7	0.00000
8	-0.00001
9	0.00001
10	-0.00001
Standard Deviation	0.000009

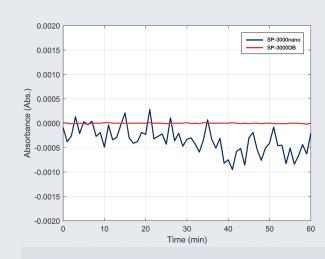


Noise

SP-3000DB guarantees Noise Level same as <± 0.00005 Abs at 700 nm and <± 0.00008 Abs at 240 nm.

Noise level measurement

Wavelength	Measured Value	Tolerance
700 nm	P-P: 0.03 mAbs	P–P: <± 0.30 mAbs
(Tungsten & Halogen lamp)	RMS: 0.008 mAbs	RMS: <± 0.05 mAbs
240 nm	P-P: 0.07 mAbs	P–P: <± 2.4 mAbs
(Deuterium lamp)	RMS: 0.022 mAbs	RMS: <± 0.4 mAbs



Photometric accuracy & repeatability

SP-3000DB guarantees photometric accuracy of less than ± 0.005 Abs (at 1.0 Abs) and photometric repeatability of less than ± 0.0006 Abs(at 1.0 Abs) with exceptional noise characteristics.

Absorbance measurement (at 235 nm) with Potassium dichromate solution (NIST SRMR 935a)

Photometric reproducibility measurement with blank solution at 273.00 nm

Baseline stability

(Tungsten & Halogen lamp)

There could be a tremor at measuring result by drift phenomena of light source when SP-3000DB is turned on. We recommend to have preheating time about an hour in case of high-accuracy measurement. We guarantee less than 0.0003 Abs in this case.

Baseline stability measurement					
Wavelength	Measured Value	Tolerance			
700 nm	0.05 mAbs/br	Within 0.3 mAbs/hr			

SP-3000DB ACCESSORIES (Options)

SP-3000DB is compatible with a wide range of accessories from a micro-volume cell holder to a temperature control system, providing a complete solution for laboratories and research environments in each field.



Film Cell Holder – Wide Type Single cell holder to measure solid samples, such as an optical film or slide glass, which can transmit light. Sample Size: max. 100 mm(H) x 70 mm(W) Sample Thickness: max. 5 mm



Film Cell Holder – Small Type Wide type Cell holder for measuring solid samples of a smaller size. It can be mounted on a multi-cell holder for simultaneous analysis of multiple samples. Sample Size: max. 100 mm(H) x 30 mm(W) Sample Thickness: max. 2 mm

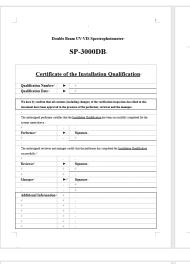


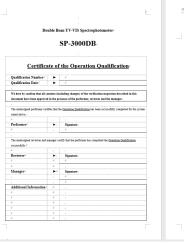
Micro Volume Cell Holder Single cell holder used when a sample volume is 500 µl or less. Optical Path Length: 10 mm

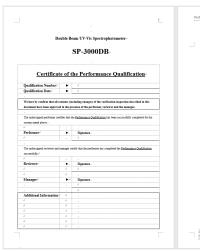
> Code NO.3000-N-CO16 Code NO.3000-N-CO25

SP-3000DB VALIDATION and DOCUMENTATION (Options)

requirements and applications regulations.







Round Cell Holder Single cell holder used for analysis using a test tube. Test Tube Diameter: 16 mm / 25 mm Test Tube Height: max. 100 mm

Center Height: 15 mm



Code NO.3000-N-CO5W

Code NO.3000-N-CO5e

Code NO.3000-N-CO3

Long Path Cell Holder Single cell holder used for measurement by increasing the optical path length to analyze low concentration samples. Optical Path Length: 50 ~ 100 mm

Code NO.3000-N-CO6



Temperature Cell Holder (Water/Oil circulator Type) Apparatus that controls the temperature of the cell holder by using the water/oil circulator.

SP-3000DB meets the needs of the modern age by helping to manufacture safe pharmaceuticals in compliance with IQ / OQ / PQ

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SP-3000DB SPECIFICATIONS

Photometrics System
Light Source
Detector
Monochromator
Lamp Interchange Wavelength
Spectral Bandwidth
Wavelength – Range
– Accuracy
– Repeatability
– Setting
– Slew Rate
- Scanning Speed
Photometric – Range
– Repeatability
– Accuracy
Stray light
Baseline Stability
Baseline Flatness
Center Height (Z-height)
Standard Cell Holder
Operation
Display
Power Requirement
Dimensions
Weight

* Th	ne contents of this document may be changed without notice.	Made in JAPAN
	14 kg	
	500(W) × 430(D) × 200(H)	
	100~240 V; 50~60 Hz	
	8 inch color LCD with touch screen;	
	Windows 10 (Embedded PC);	
	Automatic Rotary type 8-position Multi-Cell Holder	
	15 mm	
	<± 0.0005 Abs	
	< 0.0003 Abs/h	
	< 0.02 % Nal at 220 nm, NaNO2 at 340 nm	
	Less than ± 0.005 Abs at 1.0 Abs	
	± 0.001 at 2.0 Abs	
	± 0.0006 at 1.0 Abs	
	± 0.0002 at 0.5 Abs	
	Transmittance : 0 % to 400 %	
	Absorbance : -4 to 4 Abs	
	Max 6,000 nm/min	
	About 8,800 nm/min	
	0.05 nm	
	<± 0.1 nm	
	± 0.1 nm (656.1 nm)	
	± 0.3 nm (For entire range)	
	190 ~ 1100 nm	
	1 nm (190 to 1100 nm)	
	Set freely in the range of 340 ~ 410 nm (Default: 370 nm)	
	Czerny–Turner type with 1200 lines/mm blazed grating	
	Silicon photodiode	
	(Built-in light source auto interchanging motor)	
	Tungsten Halogen Lamp & Deuterium Lamp	
	Double-beam type	

World Headquarters

OPTIMA Inc., JAPAN

 Image: Triangle in the system of the sys



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