



Mega Array

PDA UV-Vis Spectrophotometer



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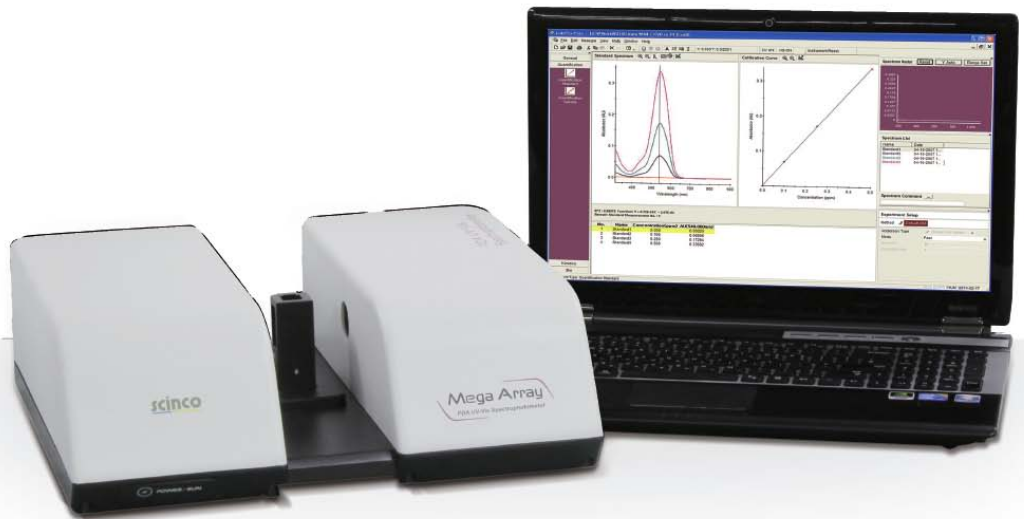
Mega Array

PDA UV-Vis Spectrophotometer

Fast, Reliable and Compact !

The SCINCO Mega Array spectrophotometer provides the ideal performance and fits for quality control and assurance measurements. This spectrophotometer delivers maximum confidence and reliability by implementing the same field-proven PDA Technology found on other SCINCO PDA UV-Vis. models.

Designed for research, routine and high-throughput applications, driven by straightforward and comprehensive software, the Mega Array spectrophotometer provides innovative UV-Vis. solutions and simplicity & capability that is second to none.

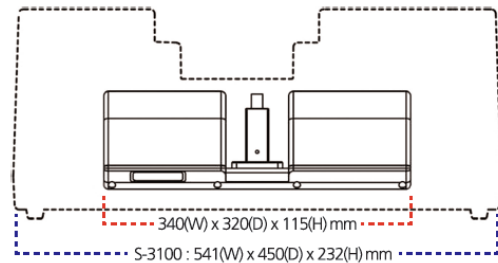


Fast Measurement

Photodiode array technology allows you to acquire full-spectrum UV-Visible data almost instantaneously. Full-spectrum data for every standard and sample enables the user to create standard curves and examine samples at any wavelength at any time, an invaluable tool for method development and sample analysis activities. Second data acquisition increases sample throughput and accelerates all of your analysis.

Compact & Durable Design

The small footprint (only 34 cm width & 6.6 kg weight) has been achieved through the design of a new small pulsed xenon lamp and the use of minimized spectrograph developed by SCINCO technology. This lightweight design enables you to move the spectrophotometer where you need at any time. Additionally, the spectrophotometer's low cost-of-ownership makes it a perfect match for analytical and educational laboratories seeking to deploy multiple units.



Premier Performance

The Mega Array uses a reverse optical geometry where light of all wavelengths is passed through the sample. For some applications and methods, this optical configuration offers tremendous advantages in data acquisition and sample throughput compared to a traditional monochromator-based spectrophotometer.

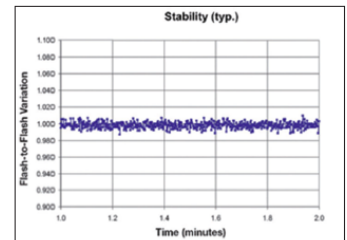
- Quality control and assurance measurements
- Multi-wavelength kinetics experiments
- Routine to research life science applications
- Coating and color applications

Further, reverse-optical systems have no moving parts; therefore they provide superior wavelength accuracy and repeatability. These instruments also need much less maintenance and offer much longer interval between qualifications.

Pulsed Xenon Lamp

The adoption of the single light source provides increased reliability, durability and also a perfect, seamless transition from UV to Visible ranges. The newest xenon lamps having half of size compared with the existing ones ensure high stability, long-life time and enough intensity. Further, the Mega Array does not require warm-up time for measurement.

- Powerful to analyze the data in UV region such as water, environment and bio samples
- No photo-degradation of samples
- Saving maintenance cost due to the longer life time
- User replaceable easily without alignment



Open Sample Compartment

The reversed optical structure makes it possible to run experiments using an open sample compartment without stray-light effects. Further, an easily accessible sample compartment and 'Magnetic in place' type for various cell holders ensure fast installation of a large selection of accessories. Quickly move between accessories to broaden the application range of your spectrophotometer.



Mega Array[®] PDA UV-Vis Spectrophotometer

LabPro[®] Plus SOFTWARE

LabPro[®] Plus Software is a powerful tool for collecting and processing data for a wide-range of applications. The software enables easy acquisition and post-run analysis of high quality data. LabPro[®] Plus software provides complete instrument and accessory control as well as data collection, analysis, and reporting capabilities. The software features a graphical interface with toolbars for easy navigation and quick access to commonly performed tasks. As standard tools, it consists of Wavelength Monitoring Mode providing full spectrum and fixed wavelength analysis as well as supporting user-defined equations and advanced spectral processing features and Quantification Mode creating standard curves and determining concentration of samples at any wavelength.



General Mode

Wavelength Monitoring

- Display the complete spectrum of the full wavelength range (190 ~ 1100 nm)
- Math function: Smoothing, Derivatives, Scalar Addition, Scalar Division, Scalar Multiplication, Log, Add, Subtract, Average
- Export to Clip Board, CSV file, Excel file, BMP file, WMF file

Equation Calculation

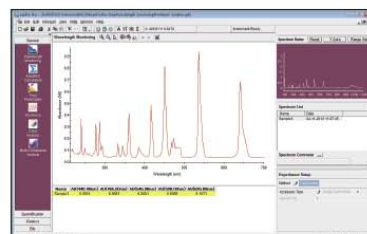
- Allows the user to enter a support equation for the evaluation of data
- Support Equation: +, -, /, *, ABS, Exp, LN, LOG10, SQRT

Find Peak / Valley

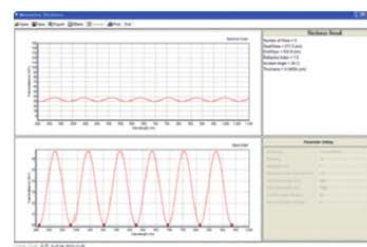
- Find up to 30 of peaks or valleys automatically or manually

Thickness

- Measure the thickness of thin film coating

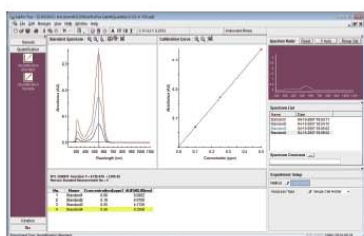


• Wavelength



• Thickness

Quantification Mode



• Quantification

Quantification Standard / Sample

- User specified concentration units
- Apply First, Second and Third Order curve fit to data
- Zero offset for Calibration Curve
- Automatic concentration calculation of unknown sample
- Available to change the wavelength for making a calibration curve after standard sample measurements
- Measure the thickness of thin film coating

LabPro® Plus Complete software provides Kinetics Mode to visualize the entire absorption spectrum of your sample at every time interval and Bio Mode for analyzing proteins and nucleic acids with pre-defined biological methods.

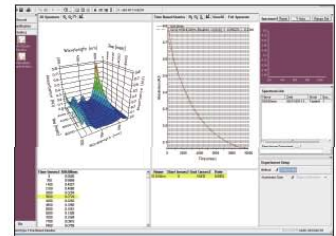
Kinetics Mode

Time Based Kinetics

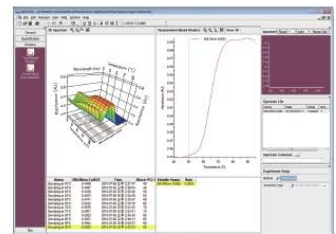
- Perform time based analyses
- Initial Rate, Zero Order, First Order, Delta AU
- Data from single wavelength (using multi-cell) or multiple wavelengths (using single cell) can be extracted for rate calculation
- Visualizing the real-time overlay of entire spectrum at every measurement

Temperature Based Kinetics

- Perform temperature based analyses
- Peltier Temp. Control Unit is required.
- Analyze the present data in 3D graphical displays with full zoom and rotation capabilities

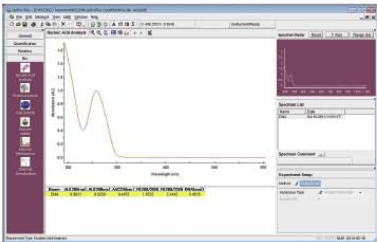


• Time Based Kinetics

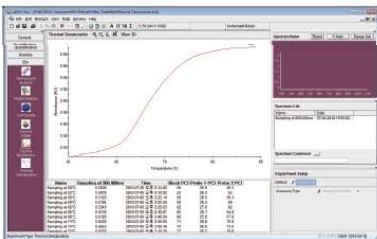


• Temperature Based Kinetics

Bio Mode



• Nucleic Acid Analysis



• Thermal Denaturation

Nucleic Acid Analysis

- Automatic calculation of the purity and concentration of nucleic acid (DNA, RNA, etc.)
- User defined Protein and Nucleic Acid factor

Protein Analysis

- Predefined Protein method: Bradford, Bicinchoninate (BCA), Biuret, Lowry, Trinitrobenzene Sulfonate, Direct UV methods

Enzyme Activity

- Calculation of enzyme activity
- User specified activity factor

Enzyme Mechanism

- Reaction rate measurements of enzyme-catalyzed reactions depending on the substrate concentration
- Calculation K_m , V_{max} from each plot
- Michaelis-Menten, Lineweaver-Burk, Hanes-Woolf, Eadie-Hofstee

Thermal Denaturation

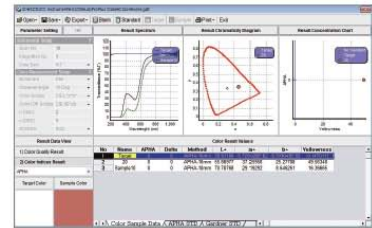
- Peltier Temp. Control Unit is required
- Perform temperature based analyses at a specific wavelength
- Calculation of T_m and %G-C
- Volume correction with user specified equation

Mega Array PDA UV-Vis Spectrophotometer

Color Analysis Software calculates $L^*a^*b^*$ color and color difference between samples as ΔE and individually as L^* , a^* and b^* . Multi Component Analysis Software provides the analysis of complex solutions and mixtures, determining the concentration of individual components in unknown sample mixtures. Validation Software is designed to verify the instrumental performance using the Validation Wizard.

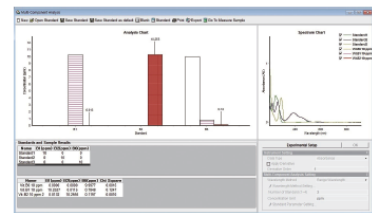
Color Analysis

- Color Difference Formula
- Measure Various Color Indices
- Display Yxy chromaticity diagram



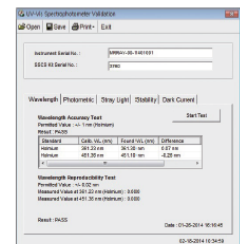
Multi Component Analysis

- Mixture composition analysis
- Concentration Determination of each component
- Capacity to analyze up to 4 components
- Math functions: Derivative, Baseline Correction



Validation

- A Validation Software for LabPro® Plus is designed to verify the instrumental performance using the Validation Wizard
- 4Q document for the Design, Installation, Operation and Performance Qualification
- Photometric, Wavelength, Stray Light, Stability and Dark Current Tests



Various ACCESSORIES

The Mega Array PDA UV-Vis Spectrophotometer features a complete line of accessories to help you assemble the best analytical system for your laboratory. Accessories are easy to insert and remove, allowing to move quickly from one experiment to the next. Automated cell holders and solid sample accessories give you the versatility you need to measure difficult samples quickly. Whether you are in research or routine analysis environment, our various accessories allow you to deliver the results you demand.



Single Cell Holder



Water Jacketed Single Cell Holder



Variable Pathlength Cell Holder



Reflectance Module

SPECIFICATIONS

Model	Mega Array
Wavelength Range	190 ~ 1100 nm
Spectral Resolution	2 nm
Light Source	Xenon Flash Lamp
Detector	Photo Diode Array
Wavelength Accuracy	±1 nm
Wavelength Reproducibility	< 0.02 nm
Photometric Range	-3.0 ~ +3.0 AU
Photometric Accuracy	± 0.01 AU with 60 ppm Potassium Dichromate ± 0.005 AU at 0.5 AU NIST 930e at Visible range ± 0.01 AU at 1.0 AU NIST 930e at Visible range
Photometric Noise	< 0.002 AU RMS at 0 AU, 300 nm
Photometric Stability	< 0.002 AU/h at 0 AU, 300 nm
Photometric Reproducibility	< 0.002 AU at 0.5 AU < 0.002 AU at 1.0 AU
Stray Light	< 0.03%T at 340 nm (NaNO ₂) < 0.05%T at 220 nm (NaI) < 1.00%T at 198 nm (KCl)
Interface	USB
Dimensions	340(W) x 320(D) x 115(H) mm
Weight	6.6 Kg
Power Requirement	100 - 240 V a.c., @50/60Hz



Advanced
Transmittance Holder



Linear Moving
Transmittance Holder



Variable Angle
Transmittance Holder



Auto Sipper



Autosampler



Nano Stick



Peltier Temp.
Control Unit
(Single Cell Holder)



Magnetic Stirrer
Assembly

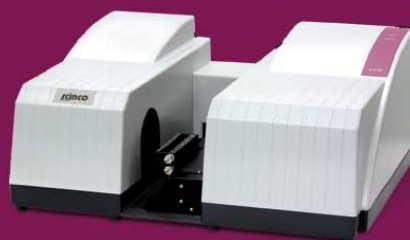
Others

- 8-Position Multi-Cell Holder
- Refrigerated Circulator / Circulator
- Others are available upon request

The SCINCO PDA UV-Vis Spectrophotometer Family



Mega Array
Affordable and
Small Footprint



S-3100
Highest Flexibility,
Productivity and
Performance



Nano-MD
Dedicated Bio
& Life Science

scinco



Website : www.scinco.com E-mail : scinco@scinco.com

SCINCO

627, Bongeunsa-ro, Gangnam-gu, Seoul 135-873 Korea
Tel : +82-2-2143-8200 Fax : +82-2-2143-8355

R&D Center

746, Daedeok-daero, Yuseong-gu, Daejeon 305-348 Korea
Tel : +82-42-610-7400 Fax : +82-42-610-7500

Warranty

One year full warranty for the complete system
and three years warranty for the spectrophotograph.

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