

Analytical Data System for UV-Vis Spectrophotometers

# LabSolutions UV-Vis



# LabSolutions™ UV-Vis

Shimadzu UV-Vis makes your work faster and easier.

The screenshot displays the LabSolutions UV-Vis software interface. At the top, a menu bar includes 'File', 'Graph', 'Instrument', 'Tools', 'Window', and 'Help'. Below the menu is a toolbar with icons for 'File Problems', 'Open', 'Save', 'Print Preview', and 'Help'. The main window shows a plot titled 'sample\_spectrum\_Peak - RawData' with 'Abs.' on the y-axis (ranging from 0.50 to 1.52) and 'Wavelength' on the x-axis. Three peaks are labeled with numbers 1, 2, and 3. A 'Detail Settings (Cutoff - Over)' dialog box is open in the foreground, showing the following configuration:

- Name:** Sample 1
- Preprocessing:**
  - Subtract blank spectrum
  - Subtract baseline
  - Wavelength Range:** WL(400.00:600.00)
- Parameter:**
  - Wavelength Range:** [Button]
  - Threshold:** [Button]
  - From short end:** [Button]
  - From long end:** [Button]
  - Evaluation:** OVER\_FROM\_SHORT\_SIDE(200.00:800.00,1.00000)
- Number of decimal:** 1
- Perform pass/fail judgment:** Pass if the evaluation value is equal to or more than th
- Threshold1:** [Button]
- Threshold2:** [Button]
- Evaluation Value >= 1.0**
- OK** [Button] **Cancel** [Button]

The dialog box also features a tree view on the left with categories like 'Measuring Mode', 'Maximum Value', 'Minimum Value', 'Peak', 'Valley', 'Area', and 'Cutoff'. A small inset graph shows a curve with a blue arrow pointing to a threshold line.

## Simple Easy to use for everyone

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Shimadzu's simple design enables both first-time users and daily users to perform operations with confidence.

## Smart optimize quality control

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Automatically determines the quality of the spectrum.  
Provides strong support for quality control operations.

## Seamless Easy transfer of measurement data

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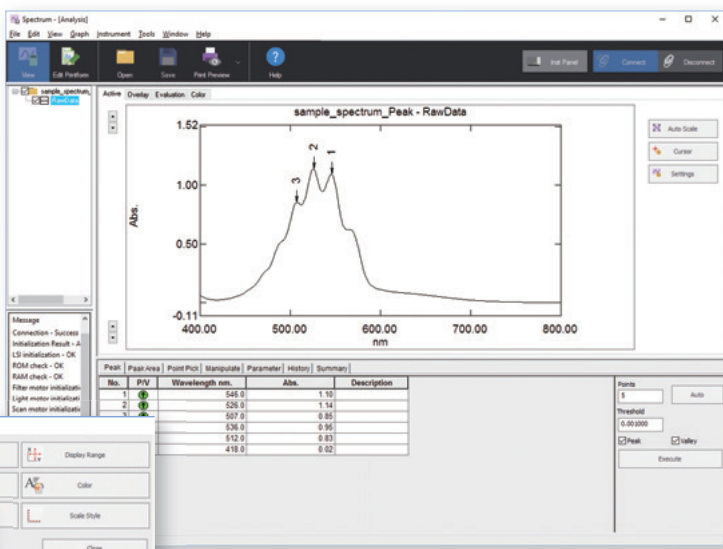
Automatically outputs text file and transfers data to Excel®.  
Easy to analyze measurement data with other applications.



# Simple Easy to use for everyone

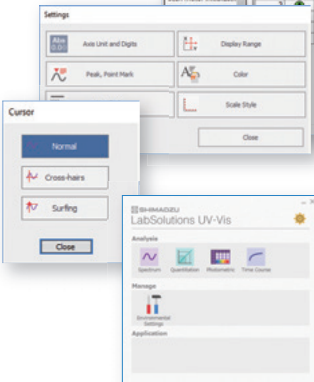
From the start, the software's user-friendliness allows users to perform operations with ease. With extensive features, LabSolutions UV-Vis meets a wide range of users' expectations.

## ◆ Simple Design

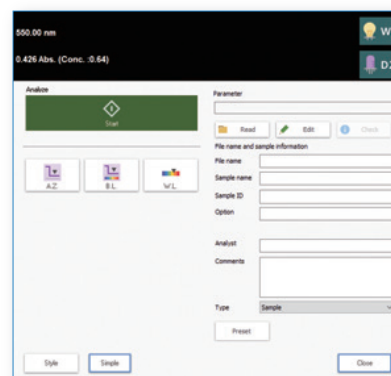


Peak No.	Peak Area	Point Pick	Wavelength nm.	Abs.	Description
1	548.0	1.13	548.0	1.14	
2	357.0	0.85	536.0	0.96	
3	512.0	0.83	418.0	0.62	

Simple Main Window  
Clear and simple layout of the graphs and measurement results makes it easy to read.



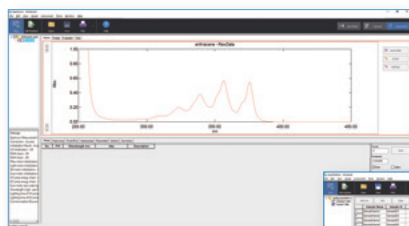
Easy-to-follow Configuration Window  
Large icons make it easy for users to understand and operate.



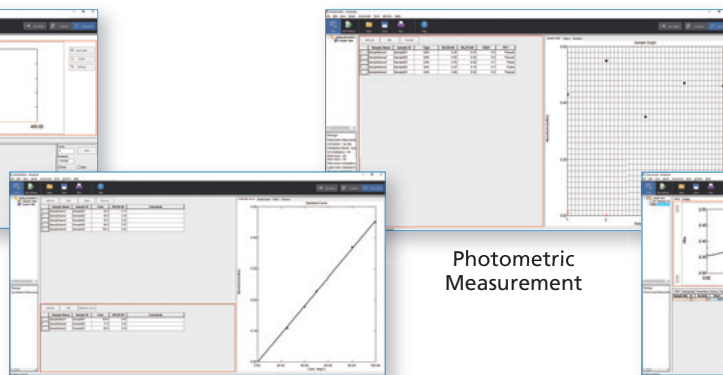
Instrument Control Panel  
The instrument control panel that brings together the measurement functions enables automatic measurement, analysis and reporting.

## ◆ Four Measurement Modes

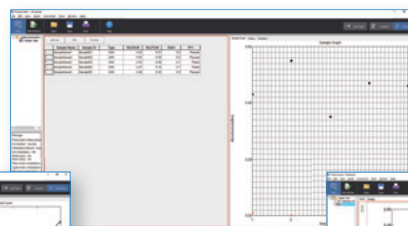
- ▶ It permits four measurement modes: spectrum, quantitative, photometric, and time course.
- ▶ Users can open multiple measurement modes at the same time, so that data analysis can be performed in one mode while collecting data in another mode.



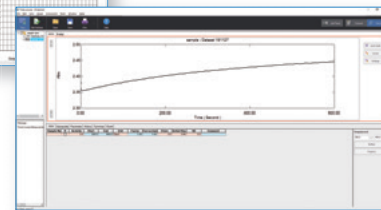
Spectrum Measurement



Quantitative Measurement



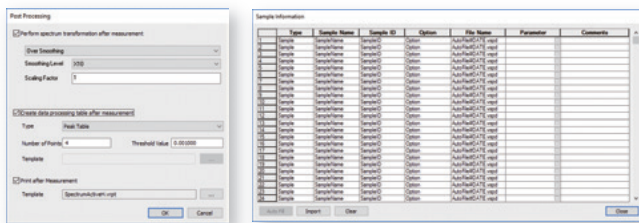
Photometric Measurement



Time Course Measurement

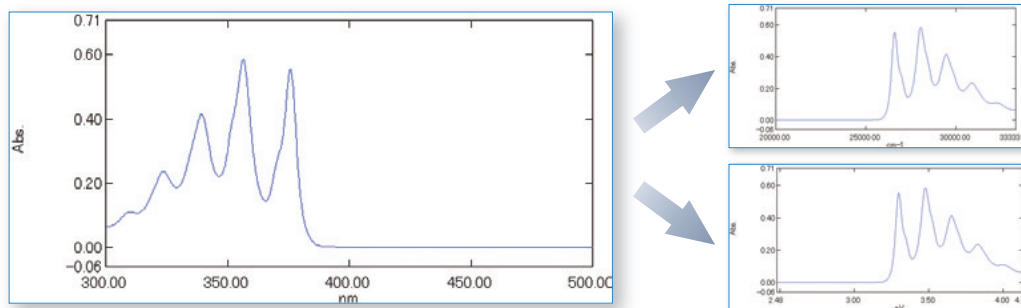
## ◆ Measurement

- ▶ Post-measurement correction of waveform, peak detection, and printing can be done automatically.
- ▶ Sample names to analyze are collected and read from a CSV file in advance.
- ▶ In quantitative measurement and photometric measurement, samples to be re-measured can be set up with ease.

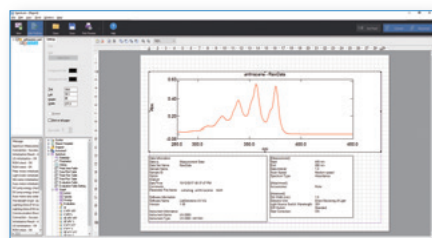


## ◆ Graph

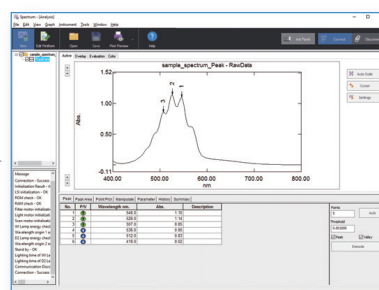
- ▶ Horizontal axis of the spectral graph can be set to wavelength, wavenumber or energy.
- ▶ Fine adjustments can be made with one click on the graph scale.
- ▶ Graphs can be easily pasted into other applications as bitmap images.



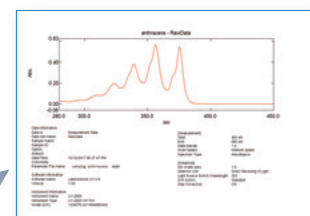
## ◆ Report



Easily create report layouts.



Print from the measurement window with one click.

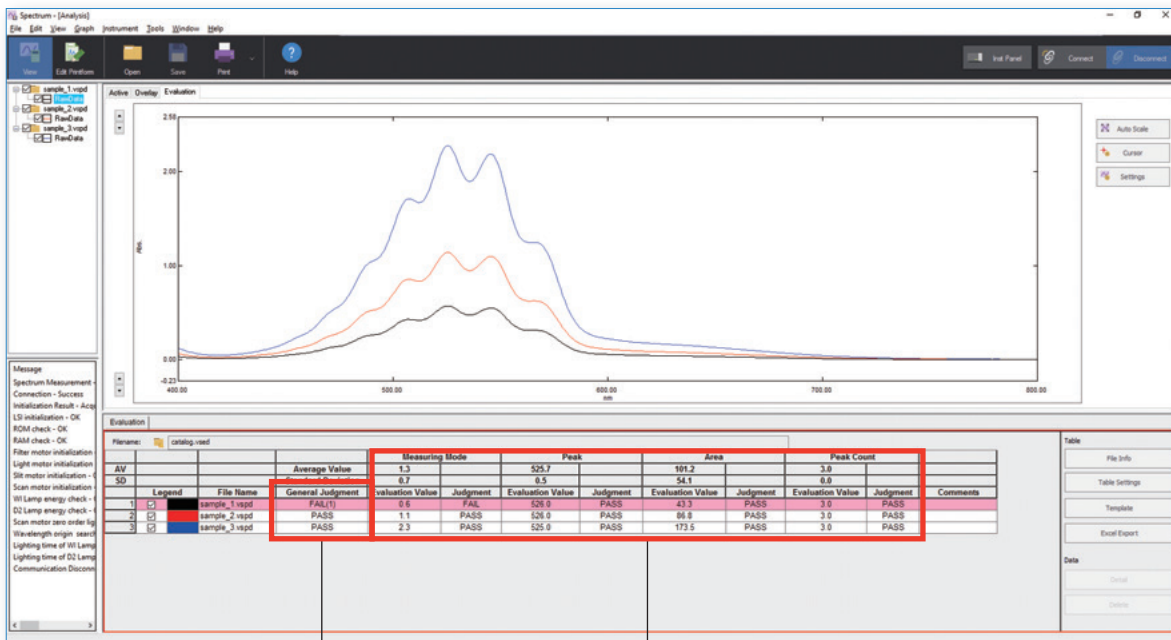


Report is printed.

# Smart optimize quality control

In addition to providing measurement and analysis results, judgment results are also provided. With this feature, LabSolutions UV-Vis enables users to maintain a product's quality.

## ◆ Spectra Evaluation Function

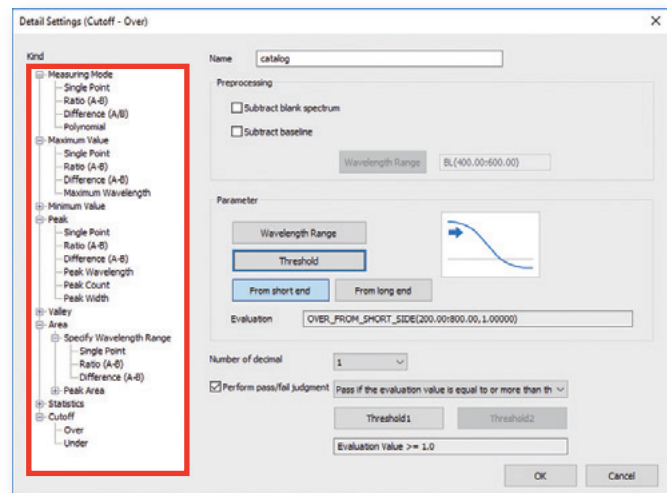


Quality of the sample can be determined with comprehensive judgment at a glance.

Multiple evaluation criteria can be set.

Evaluation method can be selected from a wealth of choices.

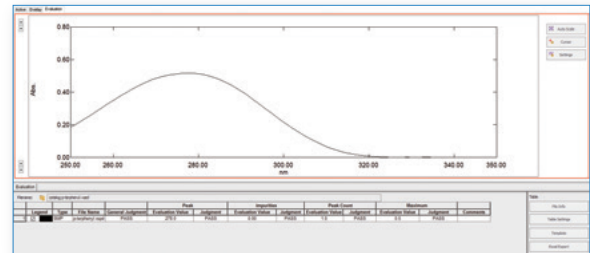
- ▶ Evaluation conditions can be saved to a file.
- ▶ Operations from measurement to judgement can be performed automatically.
- ▶ Evaluation results report can be printed with one click.



Detail Settings Window

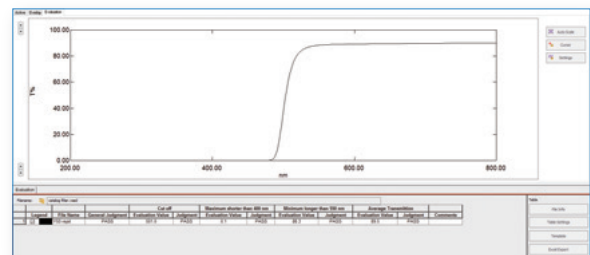
## ◆ Case 1: Validation Test in Drug Development

- █ Peak exists in the 270 to 280 nm range.
- █ Peak does not exist in the range more than 320 nm.
- █ Only one peak exists in the 260 to 300 nm range.
- █ The peak intensity is more than 0.45 Abs.



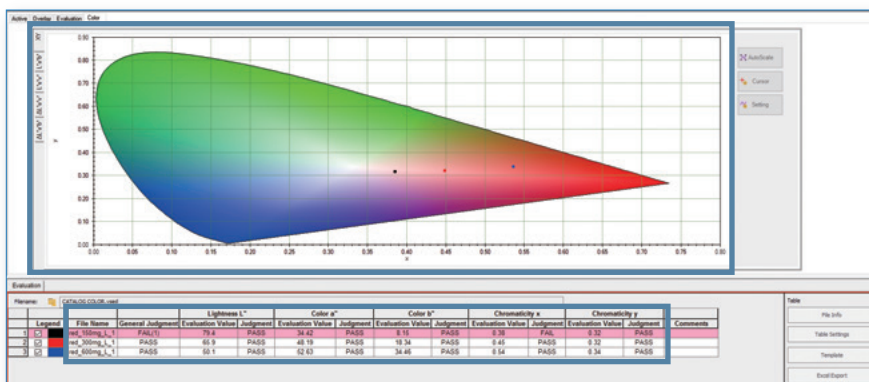
## ◆ Case 2: Quality Inspection of UV Cut Filter

- █ The first wavelength is < 550 nm when transmittance exceeds 50%.
- █ Maximum transmittance below 400 nm is less than 1.0 %.
- █ Minimum transmittance above 550 nm is more than 80.0 %.
- █ Average transmittance above 550 nm is more than 85.0 %.



## ◆ Color Analysis (Optional)

- ▶ Color calculation can be added to evaluation function.
- ▶ In addition to JIS, ISO compatible calculations can be performed.



Displays the xy chromaticity diagram in color.

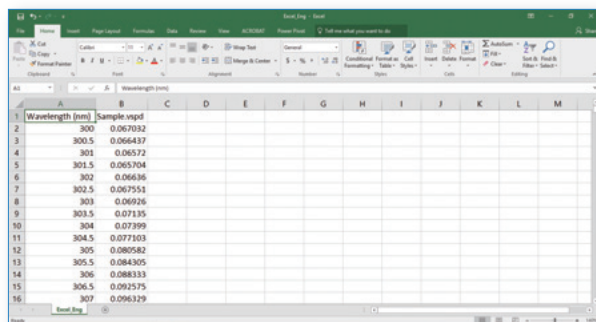
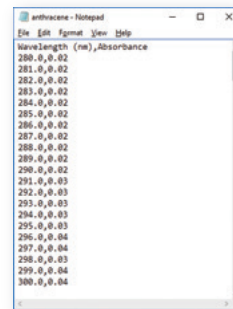
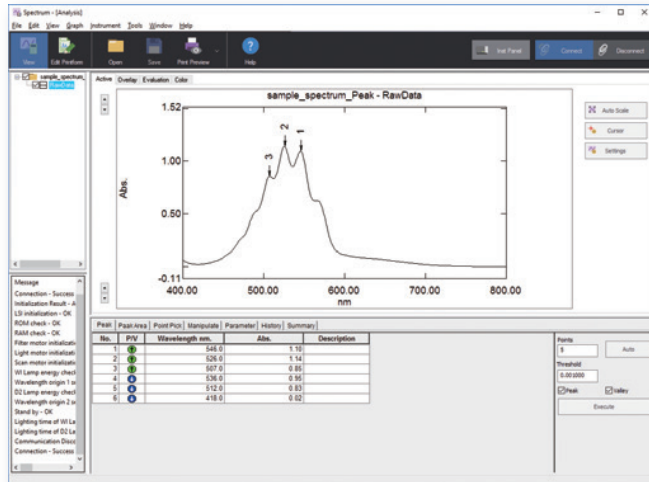
Judgments can be made using the indices of X, Y, Z, L\*, a\*, b\*, etc.

# Seamless Easy transfer of measurement data

Users want to export measurement data immediately in text format, and import for analysis in other software, such as Excel.

## ◆ To Analysis Software

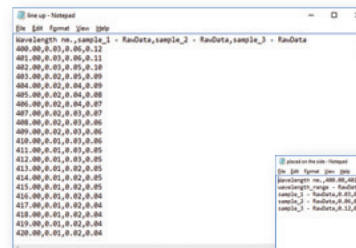
Automatically generates a text file when the spectra data are saved. It can be immediately imported into other software.



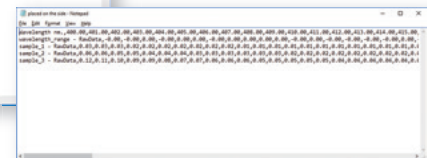
## ◆ To Excel

Real-time transfer of the spectrum waveform to Excel during measurement.  
No need to create a CSV file each time.

Line up wavelengths vertically.



Line up wavelengths horizontally.



Select how the data is ordered

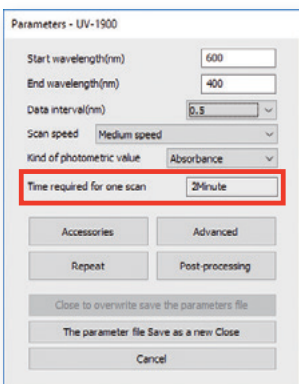
## ◆ Matrix Output

Outputs multiple spectra to one text file.  
Easy to import data into multivariate analysis software.

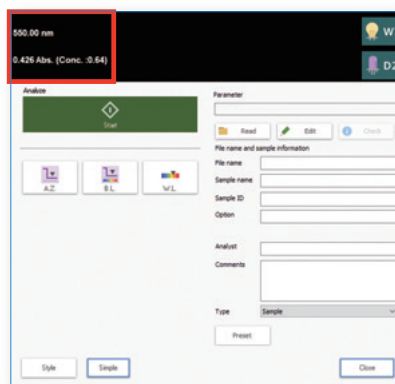


# Other Convenient Functions

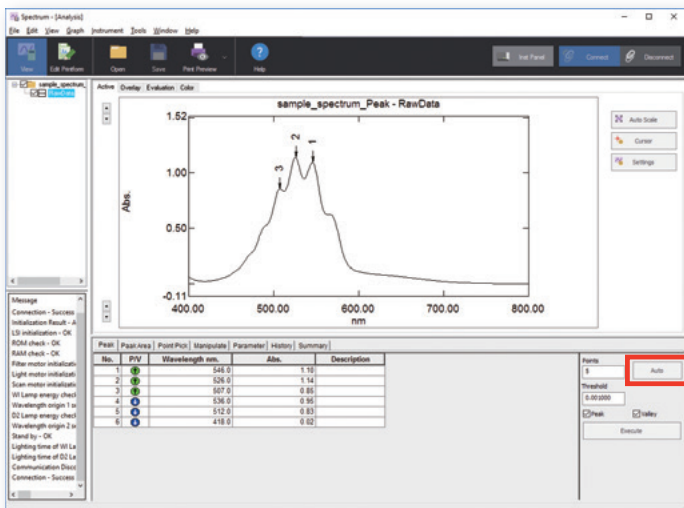
- Predict the Time Required for Scanning



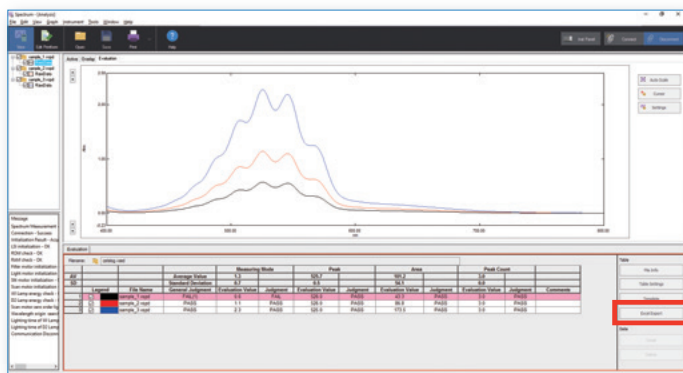
- Display the Concentration Data in Real Time



- Automatically Set the Optimal Parameter for Peak Detection



- Easy to Transfer Data Processing Table



Data table can be transferred to an Excel file with one click.

# Solutions Achieved with LabSolutions DB/CS System

## Reliable LabSolutions Software

Shimadzu offers LabSolutions DB UV-Vis and LabSolutions CS UV-Vis\* to meet the requirements of ER/ES regulations.

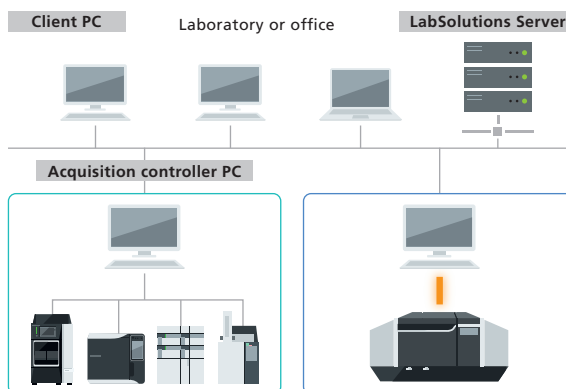
### LabSolutions DB UV-Vis

LabSolutions DB UV-Vis System can be established by introducing the database system. The system allows for data management and user management with a database. Compliant with ER/ES regulations, the system is optimally configured for customers using a PC.



### LabSolutions CS UV-Vis\*

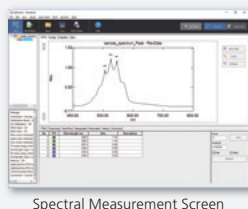
UV-Vis can be added to LabSolutions CS as an acquisition controller. The system is optimally configured for customers who want to manage data on a server together with LC and GC data for ER/ES compliance.



\* coming soon

Name	LabSolutions UV-Vis	LabSolutions DB UV-Vis System	LabSolutions CS UV-Vis System
Data management method	Measured data files are saved and managed in folders on the PC.	Measured data files are saved and managed in the LabSolutions database.	
Data references	The software references files on drives or in folders on the PC.	The software references files in the database.	
LabSolutions database	Unavailable	Available (The database resides on a local PC)	Available (The database resides on a server)
User administration	Unavailable	Available	
Rights group administration	Unavailable	Available	
Project administration	Unavailable	Available	
Standalone/network	Only the standalone configuration can be used.	Only the standalone configuration can be used.	Only databases on the network can be used. (LabSolutions UV-Vis data can be viewed using the database manager on a PC set up for viewing purposes. Note that LabSolutions UV-Vis must be installed on the PC used for viewing.)
Data backup	Performed on a file-by-file basis using Windows Explorer.	Performed for each database.	

Operates with LabSolutions, Shimadzu's reliable and popular workstation used in chromatography and spectroscopic analysis.



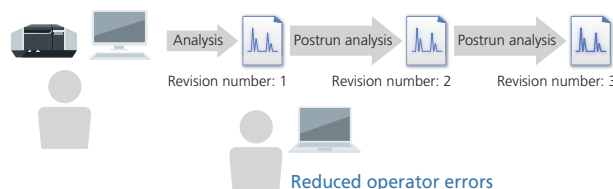
Spectral Measurement Screen



## Database Management Prevents Mistakes

With LabSolutions DB UV-Vis System and LabSolutions CS UV-Vis System, the analysis data are managed securely by the database. Overwriting, deletion and other mistakes typical of data file management do not occur.

In addition, when postrun analysis is performed using the acquired data, postrun analysis data revision numbers are automatically assigned, preventing the accidental overwriting of raw data.



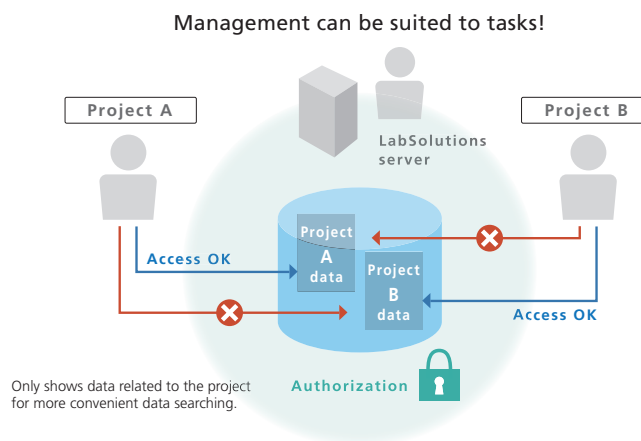
## Solid Security

An audit trail to ensure the reliability of data and document e-mail transmission functions when any event occurs in the system can be set up. User accounts are managed using passwords, where password length, complexity and term of validity must satisfy specified requirements. It is also possible to

set lockout functions to prevent illegal access, and set a registered user's deletion and change. In addition, a box can be selected to prevent overwriting a data file, and outputting an item to a report can also be performed.

## Pertinent Information Managed for Every Project

LabSolutions DB UV-Vis System and CS UV-Vis System provide a project management function enabling management suited to tasks and system operations. This function enables equipment and user management, security policy, and data processing to be set on a project-by-project basis, thereby improving the efficiency of data searches and management tasks.

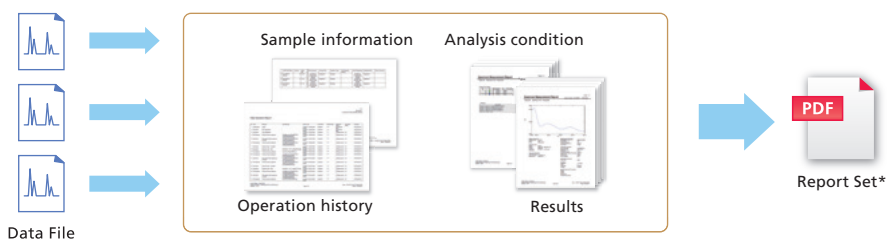


## Visualization of the Sequence of Analysis Operations

Creating a report set\* provides visibility of the individual analytical operations involved in the overall analytical process. When analytical operations are visible, it is easier to check for operating errors, which helps improve the efficiency and

reliability of checking processes.

\* Report sets include test methods and test results for a series of samples analyzed, and also a corresponding operation log (a record of all operating events from login to logout), which is automatically extracted from the data and summarized in a single report.



# UV-VIS Spectrophotometer Series Controlled with LabSolutions UV-Vis



## ◆ UV-1900

UV-1900 is a stand-alone UV-Vis spectrophotometer equipped with a touch-screen display. An easy-to-use interface enables smooth operation while its high performance allow use in a variety of fields for both quality control and research.



## ◆ UV-2600/2700

A high-precision UV-Vis spectrophotometer in a compact design, the UV-2600/2700 can be expanded with a wealth of accessories to suit various measurement objectives and accommodate a wide range of samples, including solids, liquids, films, and powder. Furthermore, the UV-2700 is equipped with a double monochromator to allow a high absorbance level of 8 Abs.



## ◆ UV-3600 Plus

UV-3600 Plus is a UV-VIS-NIR spectrophotometer equipped with 3 types of detectors, it uses a photoelectron multiplier for the UV-VIS range and uses InGaAs and cooled PbS detectors for the near infrared range. Broad measurement range from 185 nm to 3,300 nm enables measurements over a wide range. The InGaAs detector covers the low-sensitivity region in the crossover range between the regions used by the PMT and the PbS detector. This function ensures high-sensitivity across the entire measured wavelength range for liquid and solid samples.



## ◆ SolidSpec-3700/3700 DUV

The SolidSpec-3700 and 3700 DUV are the UV-VIS-NIR spectrophotometers with three detectors, they also equipped with the integrating sphere as standard. The use of the InGaAs and PbS detectors makes the sensitivity in the near-infrared region significantly high. The SolidSpec-3700 DUV has the capability to measure the deep ultraviolet region. The large sample compartment for nondestructive measurements enables measuring large samples up to 700 mm × 560 mm.

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