

Instruction manual

VWR® P6 UV/VIS Spectrophotometer

EU cat. no 634-1230



CE

UK
CA

Legal address of Manufacturer

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Safety Information

Avoiding Electrical Shock

Please follow the guidelines below, and read this manual in its entirety to ensure safe operation of the unit.

VWR recommends against the use of P6 Spectrophotometer.



To avoid electrical shock

- Do not open the device.
- Disconnect the device from the mains supply before carrying out maintenance work or changing the fuses.
- The inside of the device is a high-voltage area Danger!
- Do not use the device if it is damaged, especially if the main power cable way is in any damaged or defective.
- Repairs may only be carried out by the service technicians from your local VWR office and authorized contractual partners.
- The device must be connected to a power outlet that has a protective ground connection.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



Avoiding Damage to the Instrument

- Do not allow any liquid to enter into the device.
- Do not operate the device in a hazardous location or potentially explosive environment.

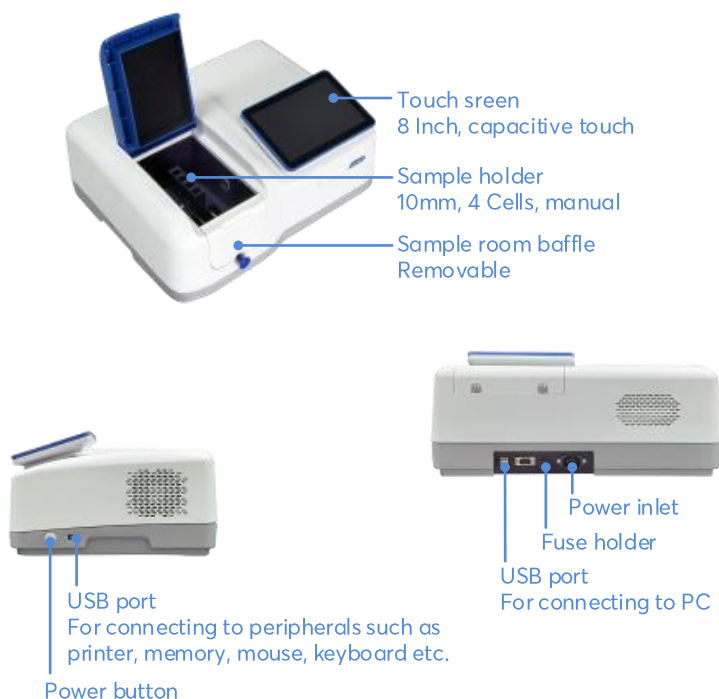
Package Contents

Description	Quantity
Spectrophotometer	1PC
Cuvette, Square.Glass, 10mm (634-6013)	4PCS
Cuvette, Square.Quartz, 10mm (634-6018)	2PCS
Power Cord (Euro/UK/CH Plug)	3PCS
VWR® UVStudio Standard Software USB Flash Drive	1PC
USB Cable	1PC
Quick Manual	1PC
Dust Cover	1PC
Fuse	1PC

Unpacking

Open the package, according to carefully check the packaging packing list items, if found inside the packaging are missing or damaged items please contact your local VWR/Avantor service provider or something similar.

Appearance



Installation

Placement

Carefully place the instrument on a stable workbench.

Connect the power cord

Check to confirm instrument power switch is turned off, the power cord plug into two separate power interface and power supply socket apparatus.

Placement

Place the instrument on the stable table carefully.

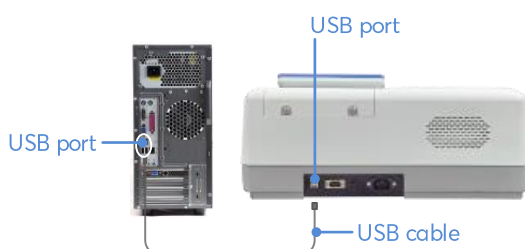
Connect the power cord

Check to confirm instrument power switch is turned off. Plug the female of the power cord into the power inlet of the instrument and plug the male into the power outlet.



Connect to computer with USB Cable

Plug one end of the USB cable into the instrument's USB port (Type B, square) and the other end into the computer's USB port (Type A, flat).



Intended use

For research use only. Not intended for any animal or human therapeutic or diagnostic use.

Symbols and conventions

The following chart is an illustrated glossary of the symbols that are used in this manual.

	CAUTION This symbol indicates a potential risk and alerts you to proceed with caution.
	CAUTION This symbol indicates the presence of high voltage and warns the user to proceed with caution.
	CAUTION This symbol indicates risks associated with hot surfaces.

Product Specifications

Optical System	Dual Beam
Wavelength Range	190-1100nm
Band Width	1.5nm
Stray Light	$\leq 0.05\%T$ @ 220nm & 360nm
Photometric Range	0 to 200%T, -0.3 to 3.0A, 0 to 9999C
Wavelength Accuracy	$\pm 0.5nm$
Photometric Accuracy	$\pm 0.3\%T$ or $\pm 0.004A$ @ 1A
Stability	0.0005A/h @ 500nm (After warming up for 1 hour)
Baseline Flatness	$\pm 0.001A$
Language	English, French, German, Spanish, Portuguese, Chinese
Display	TFT Color LCD (8", Touch Screen)
Storage	128GB
Interface	USB-A $\times$ 1, USB-B $\times$ 1
Measuring Procedure	Photometry, Multi-wavelength, Kinetics, Time Scanning, Quantitation, Spectrum, Nucleic Acid/Protein
Power Supply	AC 100~240V, 50~60 Hz, 120W
Dimension	456mm $\times$ 360mm $\times$ 213mm
Weight	11kg
Work Environment	15 to 35°C, 15 to 70% relative humidity
Store Environment	-10 to 50°C, 15 to 70% relative humidity

This instrument is compliant to the European Directives on Low Voltage Directive 2014/35/EU, Electromagnetic compatibility 2014/30/EU.
Restriction on use of Hazardous Substances RoHS 2011/65/EU and their amendments.

Overview

P6 Spectrophotometer used in Chemistry, Pharmaceuticals, Biochemical, Metallurgy, Light Industry, Textile, Material, Environments, Medical, Education and some other fields for Quality Control laboratories.

Getting Started

The following chart describes the basic operation of the instrument.

Turn the instrument power on/off

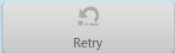
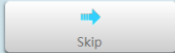
Press the blue button on the right of the instrument to start/shut down.

Note *Do not turn the instrument on and off continuously and quickly. Wait at least 30 seconds before turning the instrument back on, otherwise the electrical and mechanical systems may be damaged.*

Self-check and calibration

Check the instrument sample chamber and remove anything from the light path. Launch the

application UVStudio after double-clicking the icon  on the windows desktop. The instrument starts self-check. Self-check includes the following steps: Turn on lamp and positioning light source → positioning grating → positioning automatic sample holder (If installed.) → positioning filter wheel → correct dark current → calibrate wavelength → checking energy → checking system baseline.

Initialization	
System	Passed
Light Source Initialization	Passed
Grating Initialization	Passed
Adjustable Slit Initialization	Not Configured
Automatic Sample Holder Initialization	Not Configured
Filter Wheel Initialization	Passed
Dark Current Correction	Passed
Wavelength Calibration	Passed
Energy Checking	Passed
System Baseline Checking	Passed
Warm-up	Remaining 14 Minute
 	

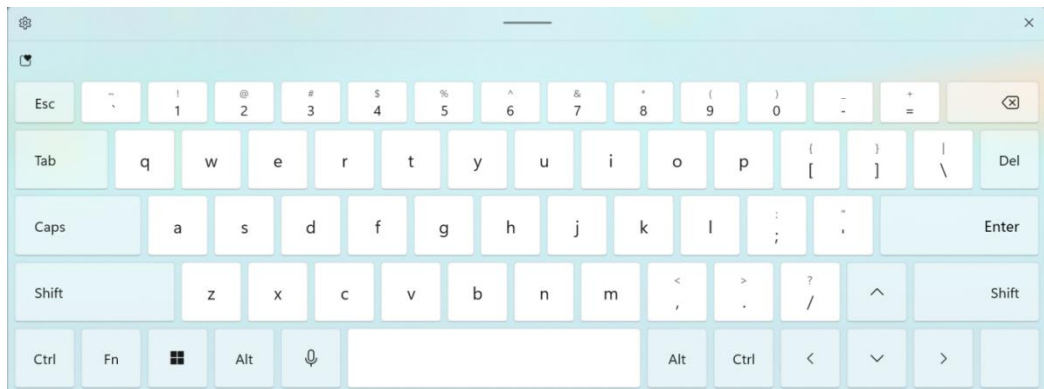
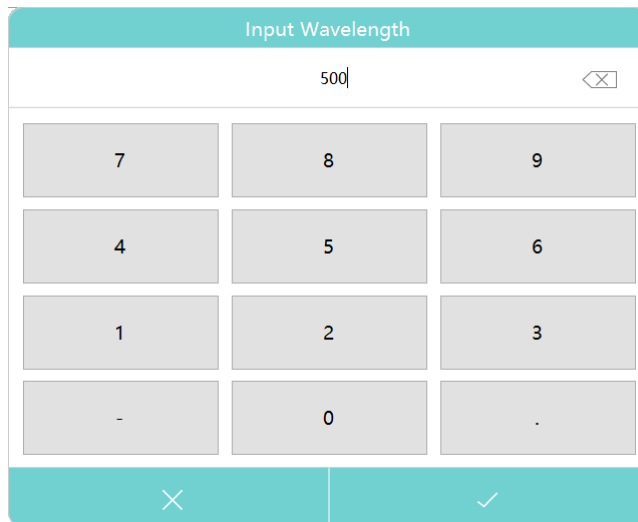
General Operating Instructions

Touch screen using tips

The entire screen can be started with a touch. To make a choice, use your nails, fingertips, pencil, or stylus to press the screen. Don't press the screen with sharp objects (such as ball point).

Using the keyboard

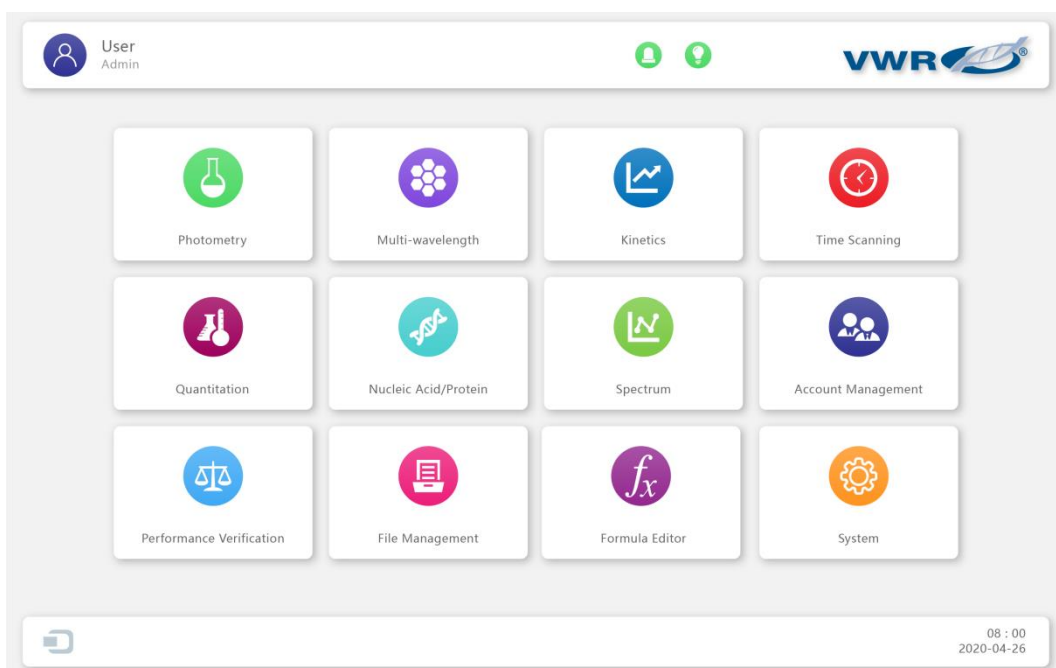
The instrument provides two kinds of keyboards for different situations. The numeric keypad is used to input parameters, and the full keyboard is used to input user information and file names.



Basic Operation

Enter an application module

Main interface, press an application icon enter to measurement interface.



	Photometry Measure the photometric value of a sample at a single wavelength.
	Multi-wavelength Measure the photometric value of a sample at multiple wavelengths.
	Kinetics Measuring the change in absorbance or absorbance change rate over time at a specified wavelength.
	Time Scanning Measure the change of photometric value with time at a single wavelength.
	Quantitation Establish a standard curve and measure the concentration of the sample using a standard curve.
	Nucleic Acid/Protein Measure DNA, RNA and protein concentrations using built-in methods or new methods.

	Spectrum Measure the photometric curve of a sample over a range of spectra.
	Account Management (Only For Audit Trail Edition) Assign user rights, operate log management.
	Performance Verification Verify the technical performance of the instrument.
	File Management Efficient management of user files, browsing, copying, renaming, and deleting operations.
	Formula Editor Users can add calculation formula for special applications or exploratory studies according to their needs.
	System Set system parameters and system calibration.

Back to main interface

Measurement interface, click  back to main interface.

Return to previous interface

Method/Settings/Data list/Curve list interface, click  back to previous interface.

Do blank/Scan baseline

Measurement interface, put "Reference" in reference channel and measurement channel, click  to do blank/scan baseline.

Measuring sample

Measurement interface, put "Reference" in reference channel and "Sample" in measurement channel, click  to measure/scan sample.

Enter data /curve list

Measurement interface, click  to enter data/curve list.

Measurement Results Operation

	Open Open a stored file, load data or parameters.
	Save Save data, parameters to storage.
	Print Print test report.
	Export to MS Word Export file to MS Word format.
	Export to MS Excel Export file to MS Excel format.
	Export to PDF Export file to PDF format.
	Delete Delete the selected results.

Calibration and System Settings



Select the icon in the main interface. Display options to calibrate the system and configure the basic instrument settings.

System

System Calibration >

Spectral Bandwidth 1.5 nm

Light source 18562 >
Flashing Xenon Lamp

Display Resolution 0.0000 0.00% 0.00 0.000000 >
Abs/%T/Conc./r

Language English >

Printer >

General >

Model M6

Device ID X33T

Product Number UQW2309005

Hardware Version V3.0.0

Firmware Version V3.1.03

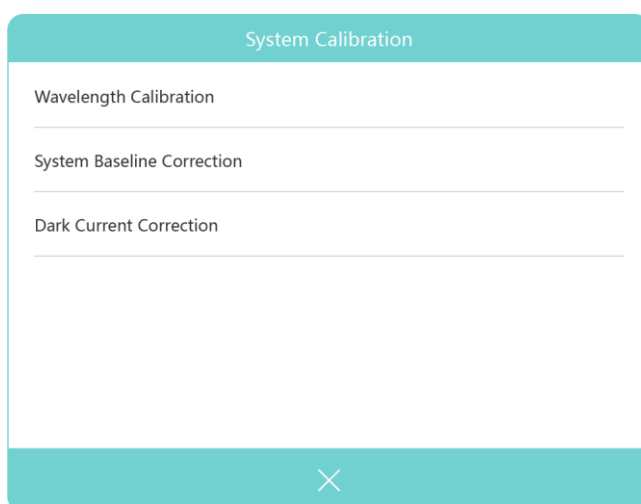
Software Version 1.0.0.18
March.27.2024

Restore Factory Settings

Calibration

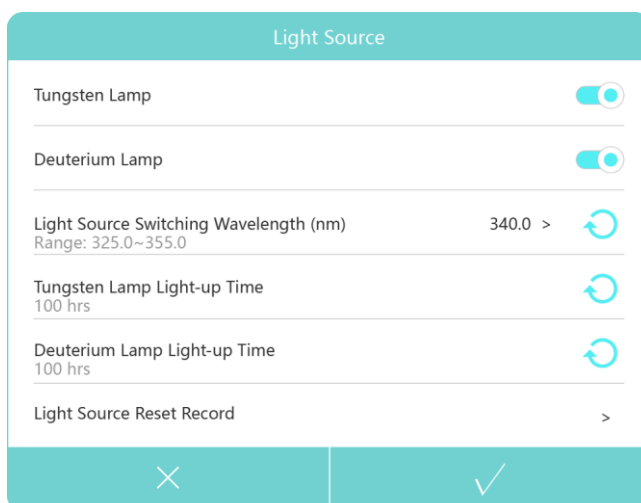
Select the tab **Calibration** in the System interface. Remove something from the measurement channel, close the sample chamber cover, and select the item **Wavelength calibration**, **System baseline correction** or **Dark current correction** to do calibration.

Important Before performing the calibration, you must remove something from the measurement channel, close the sample chamber cover, and maintain this state throughout the calibration process.



Light source management

Press the tab **Light source**, which displays the usage timing of the light source and the switching wavelength of the light source.



• Turn on/off lamp

Click  to turn on/off Tungsten lamp/Deuterium lamp.

Note When using a single light source for a long time, you can turn off another unused light source to save light source life and energy.

- **Set the light source switching wavelength**

Press the current switching wavelength, pop up the numeric keyboard, input the switching wavelength, and press the button  to complete the setting.

Note *After modifying the light source switching wavelength, you need to calibrate system baseline.*

Click  to reset the Tungsten lamp/Deuterium lamp timing.

Note *To ensure the accuracy of the light source timing, perform the corresponding light source clear after replacing the light source. Do not operate at other times.*

Display resolution setting

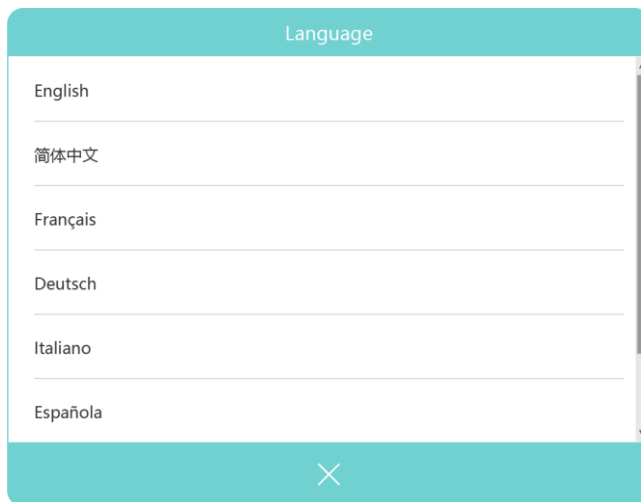
Click the tab **Display resolution**. Select the resolution of the required display digits according to different measurement modes.

Display Resolution	
Abs	0.000
%T	0.00
Conc.	0.0
r^2	0.0000

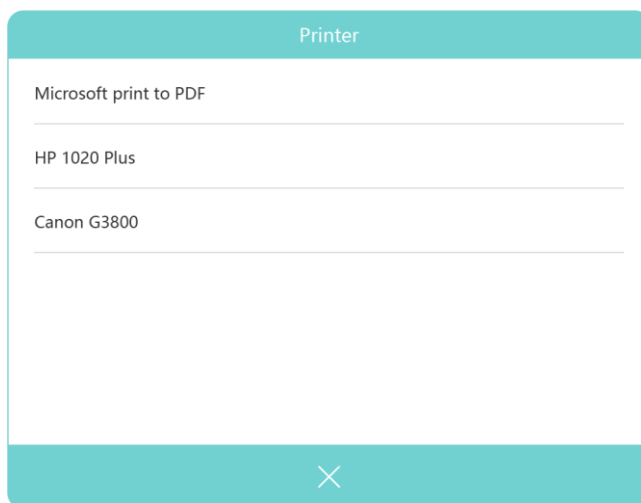
Language setting

Click the tab **Language** and select the desired language.



Printer setting

Click the tab **Printer** and select the installed printer.



General settings

Press the tab "General" to enter.

General

Warm-up After Start-up (min) 15 >

Range: 15~120

Recalibrate System Baseline After Start-up

Sample Holder Type >

- **Warm up**
Click "Warm up After Start-up (min)" , pop up numeric keyboard, input value 15~120 minutes.
- **Calibrate system baseline when startup**
Click the icon to turn on/off the "Calibrate System Baseline After Start-up" option.
- **Set sample holder type**
If you change to an auto sample holder or micro volume test base, you will need to set the sample holder to the matching type.

Important Guidelines

- Reagents and dilution buffers can cause cauterization and other damage to health.
- Samples (nucleic acids, proteins, bacteria cultures) can be infectious and cause serious damage to health.
- During sample preparation, measuring procedures and maintenance and cleaning work, observe all local laboratory safety precautions (e.g. wear protective clothing and gloves, use of disinfectant) regarding the handling of sample material.
- Dispose of measuring solutions and cleaning and disinfectant materials in accordance with the relevant local laboratory regulations.

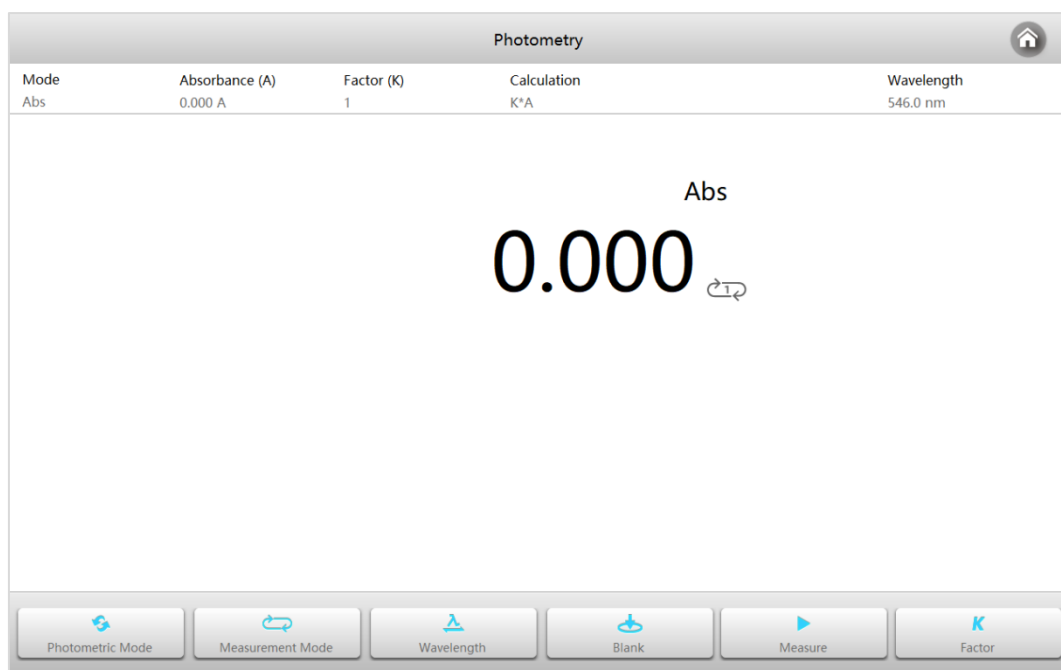
Check the cuvettes

The cuvettes must be clear and there's no remains of the samples on the surface of it. **Only Quartz cuvettes are permitted to be used in the range of UV area.**

Photometry

Photometry mode is used to measure the absorbance or transmissivity of the sample at a single wavelength.

Main interface, click the icon  to start a **Photometry** application.



- 1 Click the icon  to switch to the measurement mode.

Abs	Measure absorbance value of the sample(s).
%T	Measure transmittance value of the sample(s).

- 2 Click the button  to set wavelength, key in the measurement wavelength.

- 3 If the selection mode is Abs, you can calculate $K \cdot A$ by clicking the button **K** to set the coefficient K.
- 4 Put the reference in the measurement channel and reference channel, click the button  to do blank.
- 5 Put the sample in the measurement channel, read the result.

Multi-wavelength

Multi-wavelength mode is used to measure the absorbance or transmissivity of the sample at multiple wavelengths.

Main interface, click the icon  to start a **Multi-wavelength** application.

Multi-wavelength

No.
0001/0003

Photometric Mode
Abs

Calculation
A1-A2

Wavelength
465.0 nm

Abs

0.159

A1 635.0	A2 465.0								
1.118	0.959								

Date & Time
2024/7/23 14:48:34

Memo

Operations

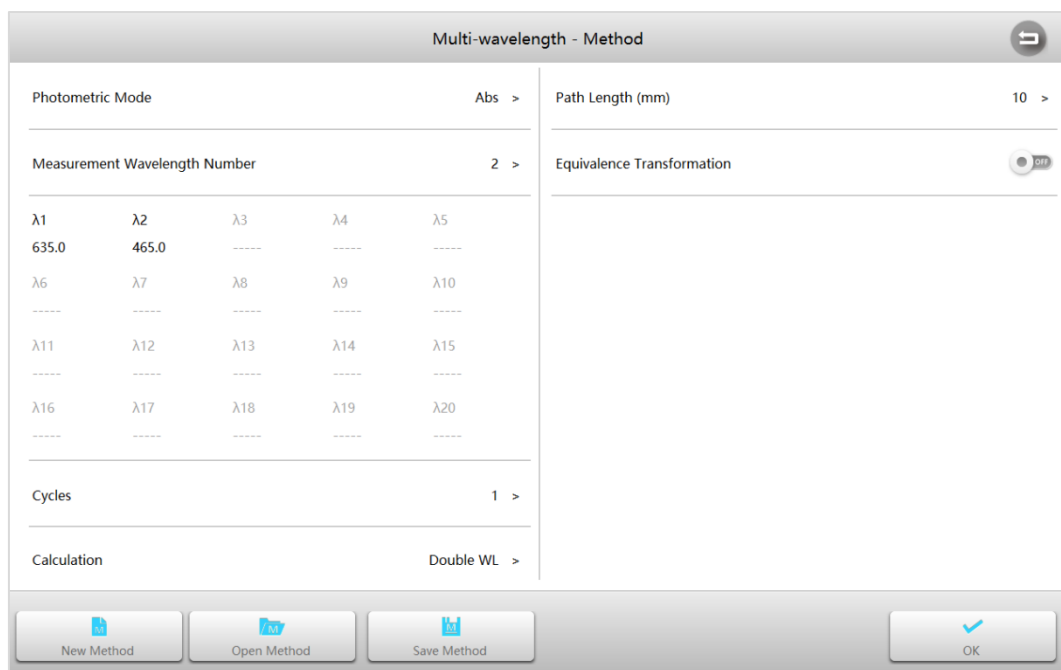
Method

Blank

Measure

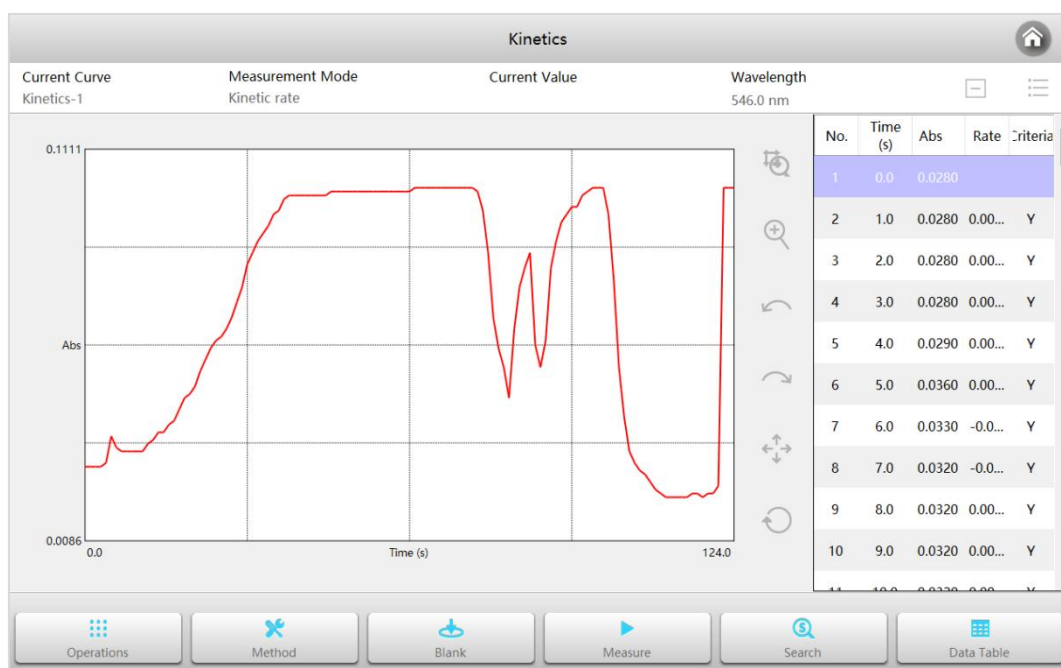
- 1 **Multi-wavelength measurement** interface, click the button  to set the measurement

parameters. The method can be saved or directly called from the memory. Click  to accept the new parameters and return to the measurement interface.



Photometric mode	2 photometric modes: absorbance, transmittance.
Measurement Wavelength Number	1~20 wavelengths are available, wavelength range: 190~1100nm.
Cycles	1, 2, 3, 5, 10, 20, 30, 50 times can be selected, the instrument will calculate the average as the final output.
Calculation	The instrument can choose to embed the calculation formula to directly calculate the result. The formula can support user customization (in the custom method module).
Path Length	The width of the cuvette used for the measurement.
Equivalence Transformation	Activation automatically converts measurements from different path cuvettes to values in the 10mm light path length.

- Put the reference in the measurement channel and reference channel, close the sample chamber cover, and click the button  to do blank.



1 Kinetics measurement interface, click the button  to set the measurement parameters.

The method can be saved or directly called from the memory. Click the button  to accept the new parameters and return to the measurement interface.

The screenshot shows the 'Kinetics - Method' configuration interface. It is divided into two columns of settings. The left column contains: Measurement Mode (Kinetic rate), Wavelength (nm) (546.0), Background Correction (OFF), Correction Wavelength (nm) (>), Total Time (s) (120), Sampling Interval (s) (1), Differential Interval (s) (1), and Criteria for Judging Linearity (%) (10). The right column contains: Path Length (mm) (10), Equivalence Transformation (OFF), Coordinate Auto Scaling (ON), Y Maximum (>), Y Minimum (>), Auto-printing (OFF), and Autosave (OFF). At the bottom are buttons for New Method, Open Method, Save Method, and an OK button with a checkmark icon.

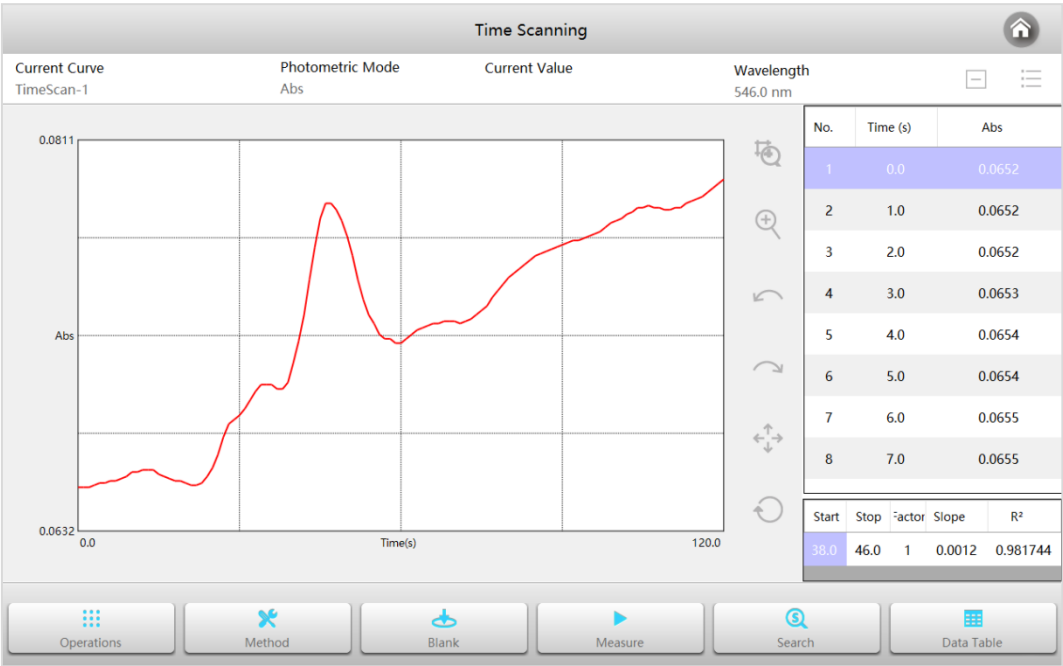
Measurement mode	2 measurement modes: kinetics, kinetic rate.
Wavelength	Measured wavelength, range: 190~1100nm.
Background correction	Background correction switch, can be set according to actual needs.
Correction wavelength	Background corrected wavelength, range: 190~1100nm.
Total Time	Measure the total sampling time required.
Sampling Interval	Sampling interval.
Delay/Derivative	Waiting time before starting sampling/time of participating activity calculation.
Coefficient	Coefficient of activity calculation equation.
Path Length	The width of the cuvette used for the measurement.
Equivalence Transformation	Activation automatically converts measurements from different path cuvettes to values in the 10mm light path length.
Coordinate Auto Scaling	Whether to automatically adjust the coordinates based on the data.
Y Maximum	The maximum value of the ordinate (valid only when the coordinates are fixed).
Y minimum	Minimum value of the ordinate (valid only when the coordinates are fixed).
Auto-printing	Automatically print curves and results after measurement is complete.
Autosave	Automatically save curves and results after measurement is complete.

- Put the reference in the measurement channel and reference channel, close the sample chamber cover, and click the button  to do blank.
- Put the sample in the measurement channel, close the sample chamber cover, and click the button  to measure and get sampled data and draw the curve.
- Repeat step 3 to measure more samples.

Time Scanning

Time Scanning mode is used to measure photometric value changes of the sample.

Main interface, click the icon  to start a Time scanning application.



- 1 Time scanning measurement interface, click the button  to set the measurement parameters. The method can be saved or directly called from the memory. Click  to accept the new parameters and return to the measurement interface.

Time Scanning - Method ↶

Photometric Mode	Abs >	Y Minimum	-4 >
Wavelength (nm)	546.0 >	Auto-printing	☒
Total Time (s)	120 >	Autosave	☒
Sampling Interval (s)	1 >		
Path Length (mm)	10 >		
Equivalence Transformation	☐		
Coordinate Auto Scaling	☐		
Y Maximum	4 >		

New Method

Open Method

Save Method

OK

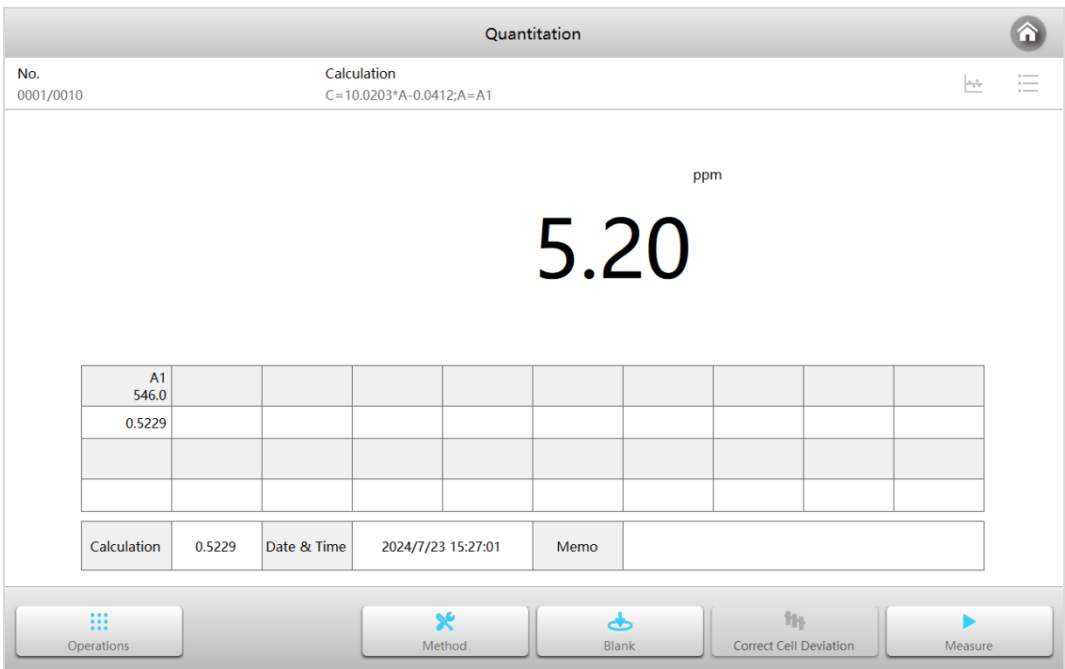
Photometric mode	2 photometric modes: absorbance, transmittance.
Wavelength	Measurement wavelength, range: 190~1100nm.
Total	Measure the total sampling time required.
Interval	Sampling interval.
Path Length	The width of the cuvette used for the measurement.
Equivalence Transformation	Activation automatically converts measurements from different path cuvettes to values in the 10mm light path length.
Coordinate Auto Scaling	Whether to automatically adjust the coordinates based on the data.
Y Maximum	The maximum value of the ordinate (valid only when the coordinates are fixed).
Y minimum	Minimum value of the ordinate (valid only when the coordinates are fixed).
Auto-printing	Automatically print curves and results after measurement is complete.
Autosave	Automatically save curves and results after measurement is complete.

- 2 Put the reference in the measurement channel and reference channel, close the sample chamber cover, and click the button  to do blank.
- 3 Put the sample in the measurement channel, close the sample chamber cover, and click the button  to measure and get sampled data and draw the curve.
- 4 Repeat step 3 to measure more samples.

Quantitation

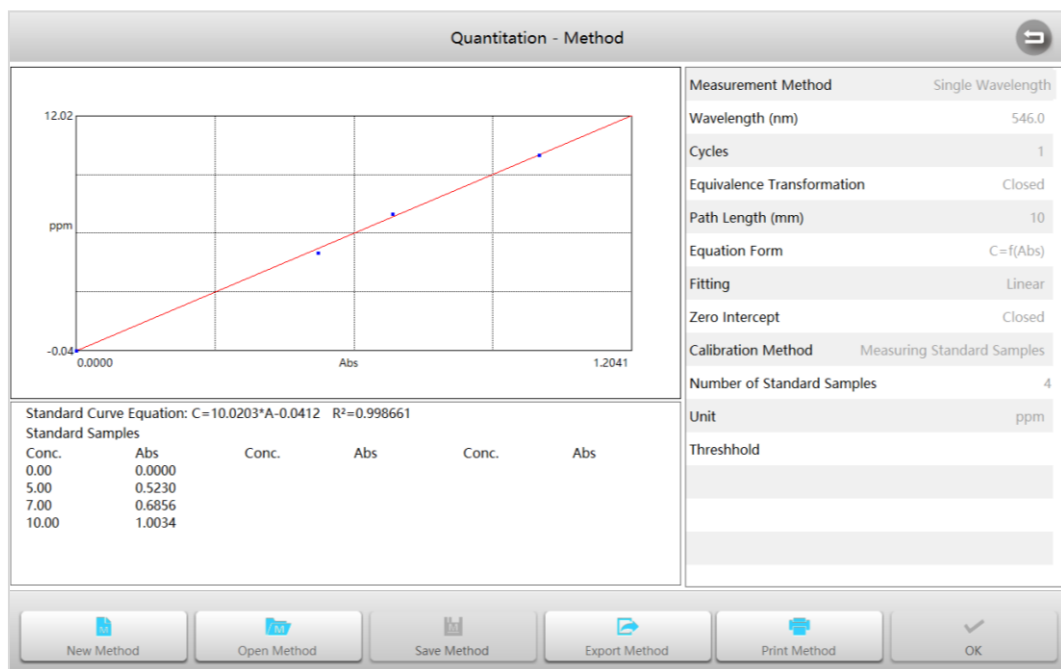
Quantitation mode is used to measure sample concentration by establishing and using a standard curve.

Main interface, click the icon  to start a Quantitation application.



Establish quantitative methods

- 1 Quantitation measurement interface, click the button  to enter into Method interface.



2 **Method** interface, click the button  to start a new measurement method and enter the parameter setting interface.

Quantitation - New Method

The interface is divided into two main sections for parameter setting.

Measurement Method Section:

- Single Wavelength:** A grid of wavelength selection buttons labeled $\lambda 1$ through $\lambda 20$. $\lambda 1$ is currently selected, showing a value of 546.0. $\lambda 2$ shows 650.0, and others are dashed.
- Cycles:** 1
- Path Length (mm):** 10
- Equivalence Transformation:** OFF

Equation Form Section:

- Equation Form:** $\text{Abs} = f(C)$
- Fitting:** Linear
- Zero Intercept:** OFF
- Calibration method:** Measuring Standard Samples
- Number of Standard Samples:** 4
- Unit:** ppm
- Threshold:** (empty field)
- Cell Deviation Correction:** OFF

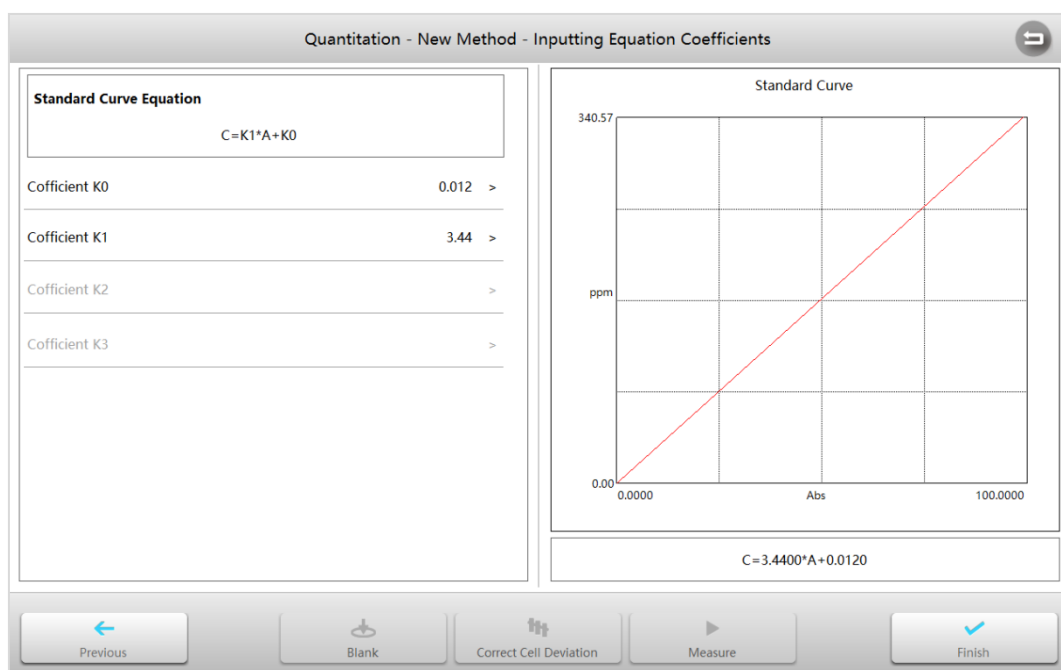
Buttons at the bottom: Open Parameters, Save Parameters, Extract Parameters, Next.

Measurement Method	Built-in single wavelength, dual wavelength difference, dual wavelength ratio, three wavelengths, area 5 ways, and support custom formula.
Wavelength	Measuring wavelength, range: 190~1100nm.
Cycles	1, 2, 3, 5, 10, 20, 30, 50 times can be selected, the instrument will calculate the average as the final output.
Path Length	The width of the cuvette used for the measurement.
Equivalence Transformation	Activation automatically converts measurements from different path cuvettes to values in the 10mm light path length.
Equation Form	Equation form: $C=F(\text{Abs})$ and $\text{Abs}=F(C)$.
Fitting	Three ways of fitting are provided: Linear, Quadratic, Cubic.
Zero Intercept	Turning on the representative fitting curve will directly cross the zero point, and closing will represent the fitting curve but the zero point.
Calibration Method	3 ways to generate a standard curve: input equation coefficient method, standard sample method and input standard sample.
Unit	Built-in 19 commonly used concentration units: -, %, ppm, ppb, g/l, mg/l, $\mu\text{g/l}$, ng/l, g/dl, mg/dl, $\mu\text{g/dl}$, mg/ml, $\mu\text{g/ml}$, ng/ml, $\mu\text{g}/\mu\text{l}$, ng/ μl , mol/l, mmol/l, IU, and support input custom units.
Number of standard samples	The number of standard samples can be selected (only valid for standard sample calibration and standard sample input), quantity: 2~20.
Threshold	Upper and lower limits of measurement results.

3 Establish standard curve

3.1 Establish standard curve by inputting the equation coefficient

- 1) Set **Calibration** to **Input Equation Coefficient**, set other measurement parameters according to measurement requirements, and click the button  to start.
- 2) **Input Equation Coefficient** interface, click the coefficient $K_0 \sim K_n$ to pop up the keyboard and enter the coefficient.

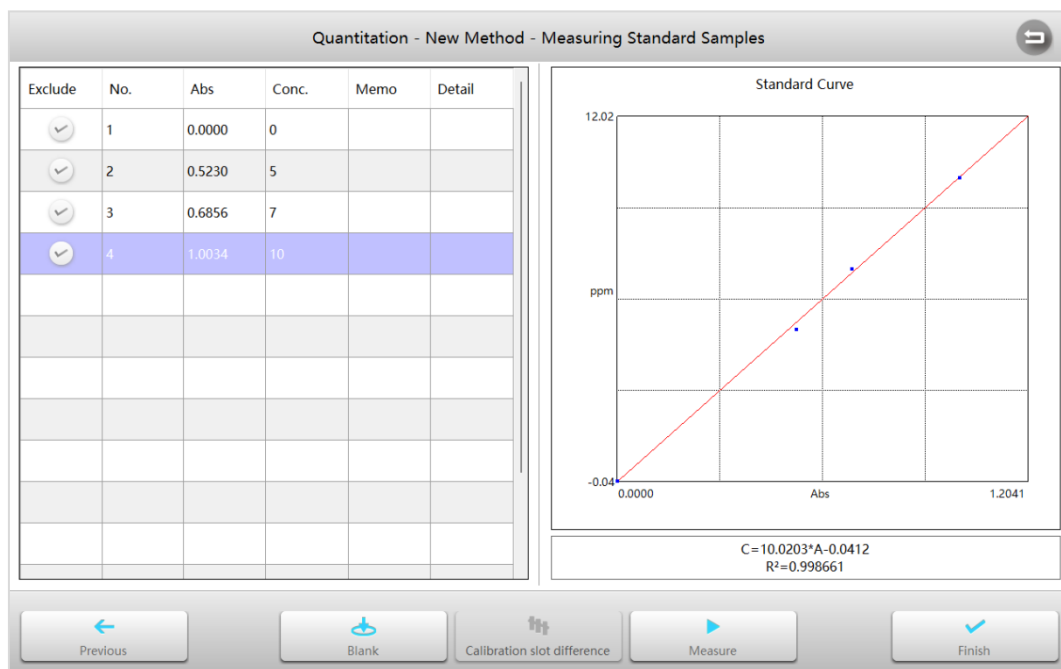


- 3) After the method is completed, the standard curve and related information are displayed.

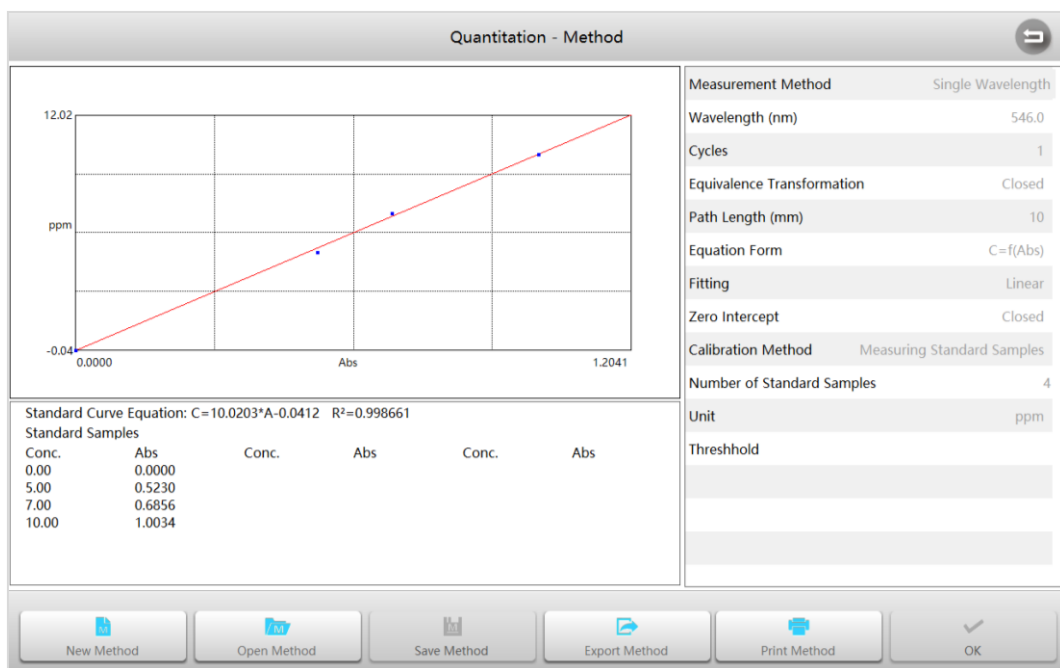
Click the button  to complete and return to **Method** interface.

3.2 Establish standard curve by measuring standard samples

- 1) Set **Calibration** to **Measure standard samples**, set other measurement parameters according to measurement requirements, and click the button  to start.

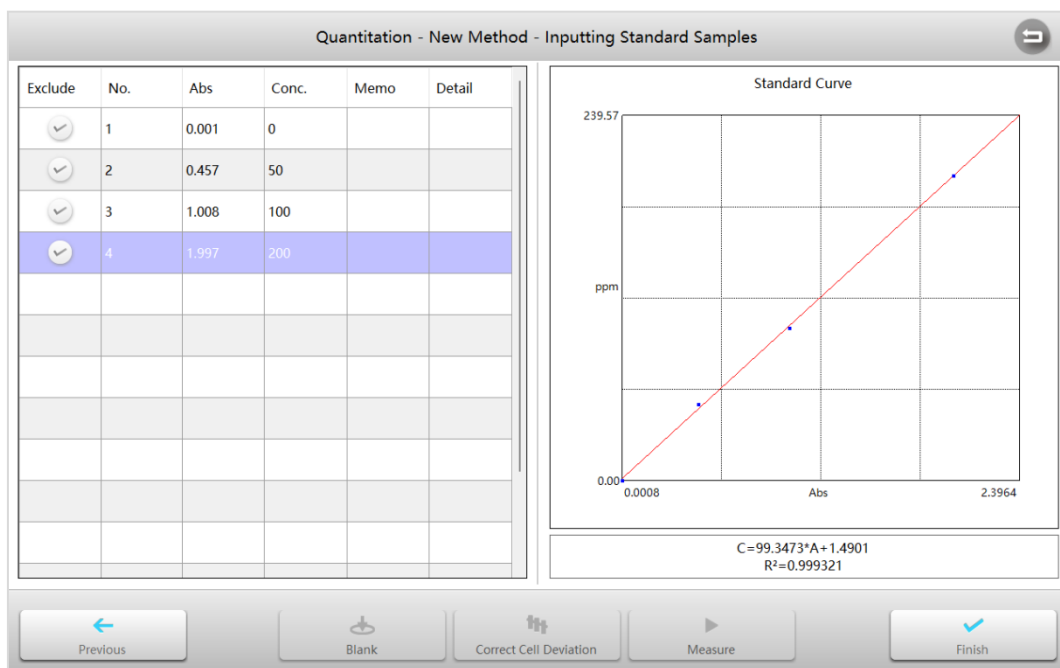


- 2) **Measure standard sample** interface, put the reference in the measurement channel and reference channel, close the sample chamber cover, and click the button  to do blank.
- 3) Put the standard sample in the measurement channel, close the sample chamber cover, and click the button  to measure.
- 4) Repeat step 3 to measure all standard samples.
- 5) Click the concentration cell to enter the corresponding concentration value.
- 6) After the method is completed, the standard curve and related information are displayed. Click the button  to complete and return to **Method** interface.

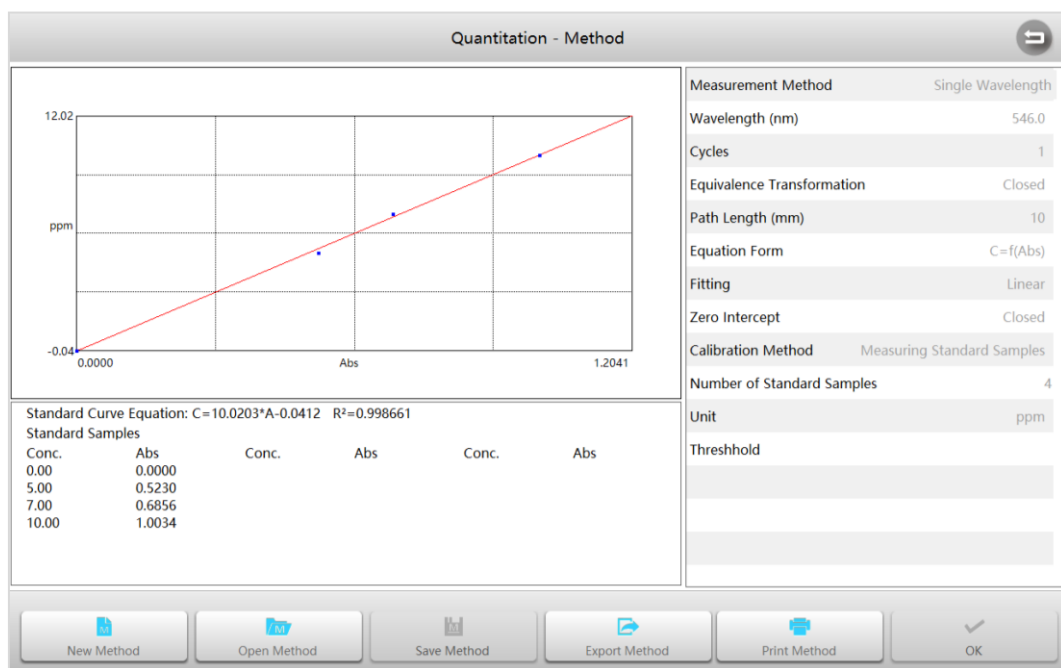


3.3 Establish standard curve by inputting standard samples

- 1) Set **Calibration** to **Inputting standard samples**, set other measurement parameters according to measurement requirements, and click the button ➡ to start.



- 2) Click the **Abs** cell to input Abs value and click **Concentration** cell to input the corresponding concentration value.
- 3) After the method is completed, the standard curve and related information are displayed. Click the button  to complete and return to **Method** interface.



Measure sample

- 1 **Quantitation measurement** interface, click the button  to enter into **Method** interface.
- 2 **Method** interface, load or new a method, click the button  to accept and return to measurement interface.
- 3 Put the reference in the measurement channel and reference channel, close the sample chamber cover, and click the button  to do blank.
- 4 Put the sample in the measurement channel, close the sample chamber cover, and click the button  to measure and calculation results.

- 5 Repeat step 4 to measure more samples.
- 6 Click  to switch to list mode to browse the list of measurement results.

Quantitation - Results					
No.	Memo	Measured	Calculated	Date & Time	Operation
1		0.5229	5.20	2024/7/23 15:27:01	
2		0.5229	5.20	2024/7/23 15:27:26	
3		0.6856	6.83	2024/7/23 15:27:28	
4		0.6856	6.83	2024/7/23 15:27:29	
5		0.6856	6.83	2024/7/23 15:27:31	
6		1.0038	10.02	2024/7/23 15:27:33	
7		1.0038	10.02	2024/7/23 15:27:34	
8		1.0039	10.02	2024/7/23 15:27:35	
9		1.0038	10.02	2024/7/23 15:27:36	
10		1.0038	10.02	2024/7/23 15:27:37	


Delete

Nucleic Acid/Protein

Nucleic Acid/Protein measurement mode is used to measure DNA, RNA and protein concentrations using built-in methods or new methods.

Main interface, click the icon  to start a **Nucleic Acid/Protein** measurement application.

- 2 **Method** interface, click the button  to start a new measurement method and enter the parameter setting interface.

Nucleic Acid/Protein - New Method ⏮

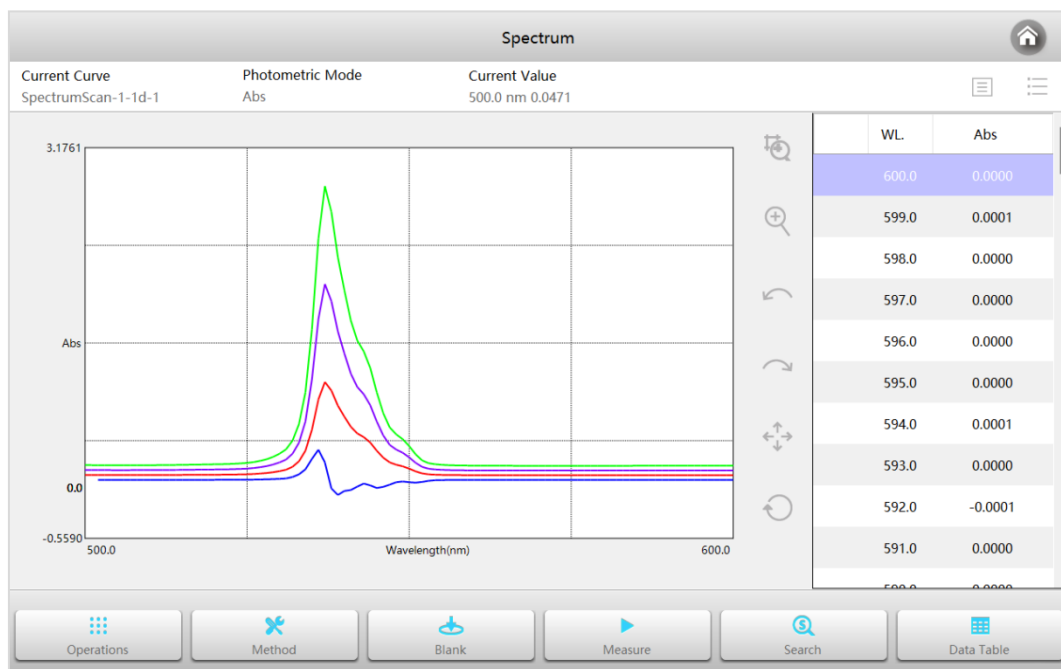
Measurement Method		Nucleic Acid >
λ1	λ2	λ3
260.0	280.0	230.0
Sample	dsDNA 50 >	
Cycles	1 >	
Path Length (mm)	10 >	
Equivalence Transformation	☐ off	
Unit	μg/ml >	
Threshold	>	

Restore Defaults
 Open Parameters
 Save Parameters
 Extract Parameters
 OK

Measurement Method	Built-in Nucleic Acid (dsDNA, ssDNA, RNA), Protein A-280 (1Abs=1mg/mL, BSA, IgG, Lysozyme), DNA Quantitation 1 (260/280), DNA Quantitation 2 (260/230), Protein-Lowry, Protein-BCA, Protein-CBB, Protein-Biuret measurement method.
Wavelength	Measure wavelength, range: 190~1100nm.
Sample	Sample type, dsDNA, ssDNA, RNA, Protein, etc.
Cycles	1, 2, 3, 5, 10, 20, 30, 50 times can be selected, the instrument will calculate the average as the final output.
Path Length	The width of the cuvette used for the measurement.
Equivalence Transformation	Activation automatically converts measurements from different path cuvettes to values in the 10mm light path length.

Equation Form	Equation form: $C=F(\text{Abs})$ and $\text{Abs}=F(C)$.
Fitting	Three ways of fitting are provided: first order, second order, third order.
Zero Intercept	Turning on the representative fitting curve will directly cross the zero point, and closing will represent the fitting curve but the zero point.
Calibration Method	3 ways to generate a standard curve: input equation coefficient method, standard sample method and input standard sample.
Unit	Built-in 19 commonly used concentration units: -, %, ppm, ppb, g/l, mg/l, $\mu\text{g/l}$, ng/l, g/dl, mg/dl, $\mu\text{g/dl}$, mg/ml, $\mu\text{g/ml}$, ng/ml, $\mu\text{g}/\mu\text{l}$, ng/ μl , mol/l, mmol/l, IU, and support input custom units.
Threshold	Upper and lower limits of measurement results.

- 3 **Method** interface, load or new a method, click the button  to accept and return to measurement interface.
- 4 Put the reference in the measurement channel and reference channel, close the sample chamber cover, and click the button  to do blank.
- 5 Put the sample in the measurement channel, close the sample chamber cover, and click the button  to measure and calculation results.
- 6 Repeat step 5 to measure more samples.
- 7 Click  to switch to list mode to browse the list of measurement results.



1 **Spectrum** interface, click the button  to enter into **Method** interface.

Spectrum - Method

Photometric Mode	Abs >	Equivalence Transformation	☐
Start Wavelength (≤1100.0 nm)	650.0 >	Coordinate Auto Scaling	☐
Stop Wavelength (≥190.0 nm)	350.0 >	Y Maximum	4 >
Scan Step (nm)	1.0 >	Y Minimum	-4 >
Scan Speed	Medium >	Auto-printing	☐
Cycles (1~99)	1 >	Autosave	☐
Cycle Interval (s)	10 >		
Path Length (mm)	10 >		

New Method Open Method Save Method

Photometric mode	2 photometric mode: Abs, %T.
Start wavelength	Scan start wavelength, range: 190~1100nm.
Stop wavelength	Scan stop wavelength, range: 190~1100nm.
Scan Step	7 wavelength interval selectable 0.1, 0.2, 0.5, 1.0, 2.0, 5.0, 10.0nm.
Scan Speed	3 scan speed selectable: Quick, Medium, Slow.
Cycles	Scan times.
Cycle Interval	Interval between 2 scans.
Path Length	The width of the cuvette used for the measurement.
Equivalence Transformation	Activation automatically converts measurements from different path cuvettes to values in the 10mm light path length.
Coordinate Auto Scaling	Whether to automatically adjust the coordinates based on the data.
Y Maximum	The maximum value of the ordinate (valid only when the coordinates are fixed).
Y minimum	Minimum value of the ordinate (valid only when the coordinates are fixed).
Auto-printing	Automatically print curves and results after measurement is complete.
Autosave	Automatically save curves and results after measurement is complete.

- 2 Put the reference in the measurement channel and reference channel, close the sample chamber cover, and click the button  to scan baseline.
- 3 Put the sample in the measurement channel, close the sample chamber cover, and click the button  to scan sample and draw the curve.
- 4 After the scan is complete, click the button  to zoom the graph as needed.
- 5 Click the button  to retrieve the value of each point (peak) of the curve and mark it for a specific point.

File Management

File Management is used to manage saved parameters, methods, and measurement files.

Main interface, click the icon  to start File management.

File Management

File directory
C:\TestFile\

Measurement Module
All

File type
All file type

Selected	File Name	Directory	Measurement Module	FileType	Operator	Date&Time
☒	SpectrumScan-1	C:\TestFile\	Spectrum	Measurement Results	Guest	2024/7/23 15:39:26
☒	DNA-1	C:\TestFile\	Nucleic Acid/Protein	Measurement Results	Guest	2024/7/23 15:34:21
☒	QuaMethod-1	C:\TestFile\	Quantitation	Measurement Results	Guest	2024/7/23 15:27:59
☒	QuaMethod-1	C:\TestFile\	Quantitation	Method	Guest	2024/7/23 15:26:48
☒	TimeScan-1	C:\TestFile\	Time Scanning	Measurement Results	Guest	2024/7/23 15:17:53
☒	Kinetics-1	C:\TestFile\	Kinetics	Measurement Results	Guest	2024/7/23 14:55:25
☒	MultiWave-1	C:\TestFile\	Multi-wavelength	Measurement Results	Guest	2024/7/23 14:49:57

Copy

Rename

Select All/Unselect

Delete

Browse file list

File management interface displays the data files stored in the storage, including data, methods and parameters. Click **Measurement Mode** and **File Type** to set the filter conditions and display the corresponding file types.

Delete files

Select the file you want to delete to make it selected, then click the button  to delete it.

Copy files

Select the files you want to copy to make it selected, then click the button  , pop up the **Path selection form**, select target path and click the button  .

Rename file name

Click the file name you want to rename, pop up the keyboard, enter a new file name, and click the button  to complete the modification.

Formula Editor

Formula Editor is used to write formulas for photometric calculations.

Main interface, click the icon  to start Formula editor.

Formula Editor

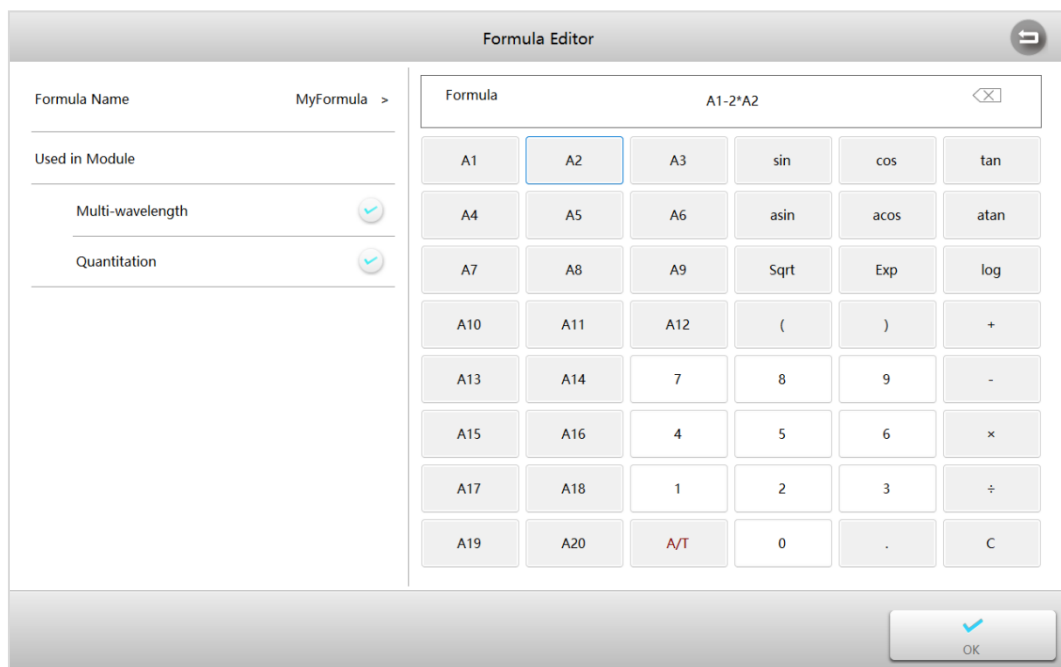
Selected	No .	Formula Name	Formula	Date & Time	Operator
☒	1	Double WL	A1-A2	2018/4/3 16:52:16	Admin
☒	2	MyFormula	A1-2*A2	2024/7/23 15:47:59	Guest
☐					
☐					
☐					
☐					
☐					
☐					
☐					
☐					

Add formula

Delete Formula

Add calculation formula

Formula list interface, click the button to enter to Formula editor interface. Enter the formula name as required by clicking the label Formula Name, and select the applied module, and enter the calculation formula and click the button  to complete.



Delete calculation formula

Formula list interface, select the method you want to delete and click the button to delete the method.

Performance Verification

Performance Verification is used to verify that the instrument's performance indicators are good.



Main interface, click the icon to start **Performance Verification**.

Performance Verification

Wavelength Accuracy and Repeatability

Standard	Certified	Accuracy Allowed	Repeatability Allowed	Measured-1	Measured-2	Measured-3	Measured-4	Measured-5	Measured-6	Accuracy	Repeatability	Result
Holmium	241.2	0.3	0.1									
Holmium	278.1	0.3	0.1									
Holmium	287.6	0.3	0.1									
Holmium	333.5	0.3	0.1									
Holmium	361.1	0.3	0.1									
Holmium	416.6	0.3	0.1									
Holmium	451.3	0.3	0.1									
Holmium	485.3	0.3	0.1									
Holmium	536.9	0.3	0.1									

Measure

Photometric Accuracy and Repeatability

Standard	Wavelength (nm)	Certified(Abs)	Accuracy Allowed	Repeatability Allowed	Measured-1(Abs)	Measured-2(Abs)	Measured-3(Abs)	Measured-4(Abs)	Measured-5(Abs)	Measured-6(Abs)	Accuracy	Repeatability	Result
Neutral fil...	465.0	0.9547	0.008	SD/0.005									
Neutral fil...	546.0	1.0044	0.0081	RSD/0.5%									
Neutral fil...	590.0	1.1079	0.0081	RSD/0.5%									
Neutral fil...	635.0	1.1192	0.0081	RSD/0.5%									

Measure

Operations

Method

System Calibration

The performance validation module has two built-in validation templates to meet the United States Pharmacopoeia (USP) and European Pharmacopoeia (EP) for direct use by the user. Users can modify based on the templates or create new test methods, and save them for use during testing.

Establish user's performance validation methods

Performance Verification interface, click the button to enter the **Method** interface.

Performance Verification - Method

	Standard	Certified	Accuracy	Repeatability	Cycles	
Wavelength accuracy	Holmium	241.2	0.3	0.1	6	—
	Holmium	278.1	0.3	0.1	6	—
Photometric accuracy	Holmium	287.6	0.3	0.1	6	—
	Holmium	333.5	0.3	0.1	6	—
	Holmium	361.1	0.3	0.1	6	—
Photometric linearity	Holmium	416.6	0.3	0.1	6	—
	Holmium	451.3	0.3	0.1	6	—
	Holmium	485.3	0.3	0.1	6	—
Stray light	Holmium	536.9	0.3	0.1	6	—
	Holmium	640.8	0.3	0.1	6	—
Resolution						

Add Sorting Empty

New Method Open method Save method OK

1 Select Validation Items

Click **New Method** to create an empty method template. In the **Validation Items** pop-up window, select the items that need to be validated and click .

Validation Items

Wavelength Accuracy and Repeatability	✓
Photometric Accuracy and Repeatability	✓
Photometric Linearity	✓
Stray Light	✓
Resolution	✓

✕ ✓

2 Edit wavelength accuracy verification

Click the **Wavelength accuracy** tab in the verification items column on the left. Enter the parameter editing interface for wavelength accuracy.

Standard	Certified	Accuracy	Repeatability	Cycles	
Holmium	241.2	0.3	0.1	6	-
Holmium	278.1	0.3	0.1	6	-
Holmium	287.6	0.3	0.1	6	-
Holmium	333.5	0.3	0.1	6	-
Holmium	361.1	0.3	0.1	6	-
Holmium	416.6	0.3	0.1	6	-
Holmium	451.3	0.3	0.1	6	-
Holmium	485.3	0.3	0.1	6	-
Holmium	536.9	0.3	0.1	6	-
Holmium	640.8	0.3	0.1	6	-

Buttons: Add, Sorting, Empty

Bottom bar: New Method, Open method, Save method, OK

- 1) Click the button **Add** to add a test point;
- 2) Click the cell in the **Standard** column to select a standard;

Standard

Holmium oxide solution

Holmium oxide glass

Praseodymium neodymium solution

Praseodymium neodymium glass

Add Remove

X ✓

Information If you are using a Standard that is not in the list, you can click the **Add** button to add it to the list, or you can remove the selected Standard from the list.

- 3) Click the cell in the **Certified** column to enter a certified wavelength test point;
- 4) Click the cell in the **Accuracy** column to enter the allowable deviation for wavelength accuracy;
- 5) Click the cell in the **Repeatability** column to enter the allowable deviation for wavelength repeatability;
- 6) Click the cell in the **Cycles** column to enter the number of tests.

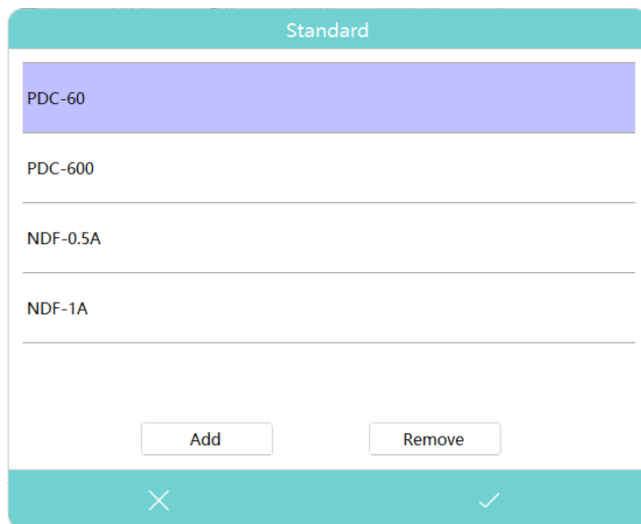
3 Edit photometric accuracy verification

Click the **Photometric accuracy** tab in the Verification Items column on the left. Enter the parameter editing interface for photometric accuracy.

Standard	Wavelength (nm)	Certified	Photometric Mode	Accuracy	Repeatability	Cycles	
Neutral flt...	440.0	1.0132	Abs	0.0081	RSD/0.5%	6	⊖
Neutral flt...	465.0	0.9547	Abs	0.008	SD/0.005	6	⊖
Neutral flt...	546.0	1.0044	Abs	0.0081	RSD/0.5%	6	⊖
Neutral flt...	590.0	1.1079	Abs	0.0081	RSD/0.5%	6	⊖
Neutral flt...	635.0	1.1192	Abs	0.0081	RSD/0.5%	6	⊖
Neutral flt...	440.0	0.6946	Abs	0.008	SD/0.005	6	⊖
Neutral flt...	465.0	0.6556	Abs	0.008	SD/0.005	6	⊖
Neutral flt...	546.0	0.6861	Abs	0.008	SD/0.005	6	⊖
Neutral flt...	590.0	0.7570	Abs	0.008	SD/0.005	6	⊖
Neutral flt...	635.0	0.7645	Abs	0.008	SD/0.005	6	⊖
Neutral flt...	440.0	0.5171	Abs	0.008	SD/0.005	6	⊖
Neutral flt...	465.0	0.4908	Abs	0.008	SD/0.005	6	⊖

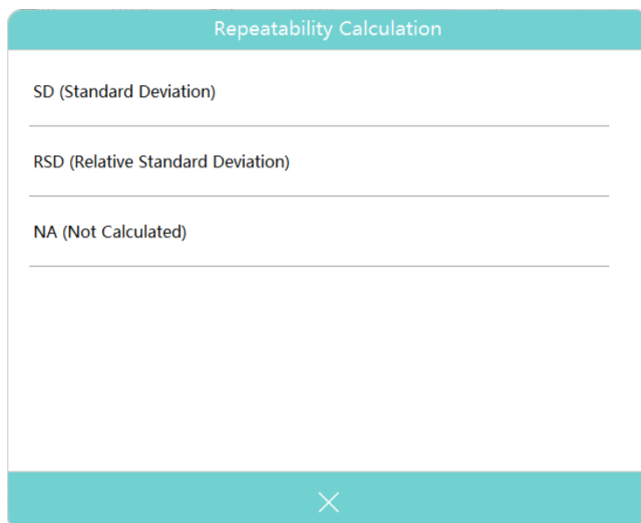
Buttons: Add, Sorting, Empty, New Method, Open method, Save method, OK

- 1) Click the button **Add** to add a test point;
- 2) Click the cell in the **Standard** column to select a standard;



A dialog box titled "Standard" with a teal header. It contains a list of standards: PDC-60 (highlighted in purple), PDC-600, NDF-0.5A, and NDF-1A. At the bottom, there are "Add" and "Remove" buttons, and a teal footer bar with a close (X) and confirm (checkmark) icon.

- 3) Click the cell in the **Wavelength** column to enter a wavelength test point;
- 4) Click the cell in the **Certified** column to enter a certified photometric test point;
- 5) Click the cell in the **Accuracy** column to enter the allowable deviation for photometric accuracy;
- 6) Click the cell in the **Repeatability** column to select the repeatability calculation method and enter the allowable deviation for photometric repeatability;



A dialog box titled "Repeatability Calculation" with a teal header. It contains three options: SD (Standard Deviation), RSD (Relative Standard Deviation), and NA (Not Calculated). Each option has a corresponding input field. At the bottom, there is a teal footer bar with a close (X) icon.

- 7) Click the cell in the **Cycles** column to enter the number of tests.

4 Edit photometric linearity verification

Click the **Photometric linearity** tab in the Verification Items column on the left. Enter the parameter editing interface for photometric linearity.

The dialog box is titled "Performance Verification - Method". On the left is a vertical list of tabs: Wavelength accuracy, Photometric accuracy, **Photometric linearity** (selected), Stray light, and Resolution. The main area contains the following fields and table:

Standard: PDC
 Linearity (%): 0.999
 Wavelength(nm): 235.0

Number of Standard Samples: 6
 Cycles: 6
 Unit: ppm

Conc.-1	Conc.-2	Conc.-3	Conc.-4	Conc.-5	Conc.-6
20	40	60	80	100	120

At the bottom are four buttons: "New Method", "Open method", "Save method", and "OK".

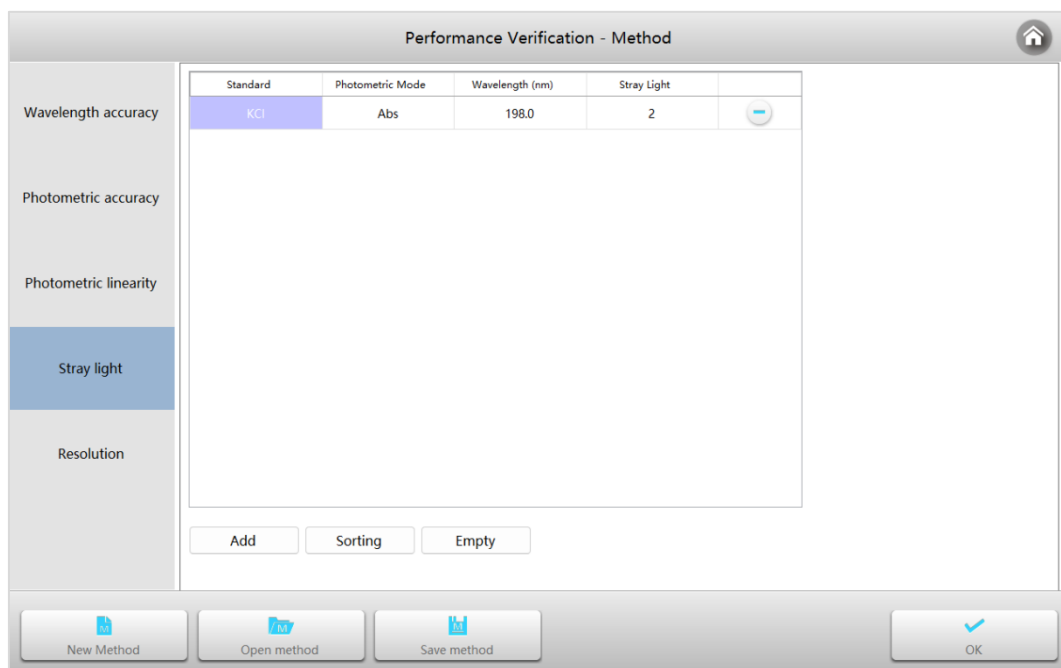
- 1) Click the cell in the **Standard** to select a standard;

The dialog box is titled "Standard". It contains a list of standards: "PDC" (highlighted in blue) and "Niacin". Below the list are two buttons: "Add" and "Remove". At the bottom are two icons: a close button (X) and a confirm button (checkmark).

- 2) Click the parameter item to set the parameter;
- 3) Enter the concentration of the standard sample in the table.

5 Edit stray light verification

Click the **Stray light** tab in the Verification Items column on the left. Enter the parameter editing interface for stray light.

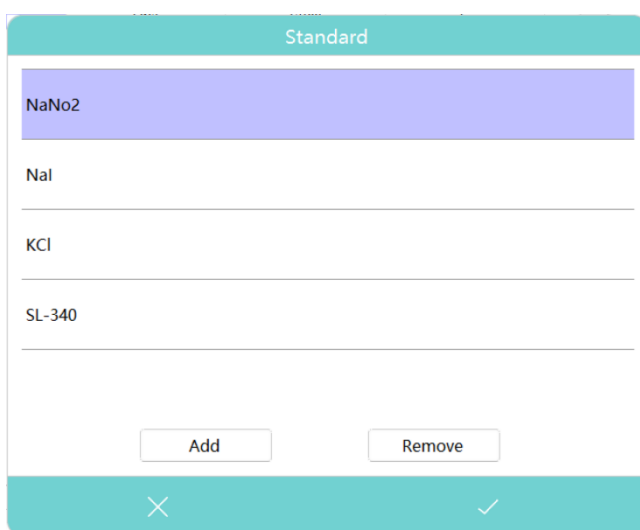


The dialog box titled "Performance Verification - Method" features a sidebar on the left with five tabs: "Wavelength accuracy", "Photometric accuracy", "Photometric linearity", "Stray light" (which is selected and highlighted in blue), and "Resolution". The main area contains a table with the following data:

Standard	Photometric Mode	Wavelength (nm)	Stray Light
KCl	Abs	198.0	2

Below the table are three buttons: "Add", "Sorting", and "Empty". At the bottom of the dialog are four buttons: "New Method", "Open method", "Save method", and "OK".

- 1) Click the button **Add** to add a test point;
- 2) Click the cell in the **Standard** column to select a standard;



The "Standard" selection dialog box displays a list of standards. "NaNo2" is selected and highlighted in blue. The other standards listed are "NaI", "KCl", and "SL-340". At the bottom of the list are two buttons: "Add" and "Remove". The dialog box has a teal header and footer with a close button (X) and a confirm button (checkmark).

- 3) Click the cell in the **Photometric Mode** column to select Abs or %T;
- 4) Click the cell in the **Wavelength** column to enter the test wavelength;
- 5) Click the cell in the **Stray Light** column to enter the allowable deviation for stray light.

6 Edit resolution verification

Click the **Resolution** tab in the Verification Items column on the left. Enter the parameter editing interface for resolution.

The screenshot shows a software window titled "Performance Verification - Method". On the left is a vertical sidebar with five tabs: "Wavelength accuracy", "Photometric accuracy", "Photometric linearity", "Stray light", and "Resolution". The "Resolution" tab is currently selected and highlighted in blue. The main content area of the window is divided into two columns. The left column contains two input fields: "Standard" with the value "N-hexane" and "Spectral Bandwidth(nm)" with the value "2.0". The right column contains two input fields: "Scanning Range (nm)" with the value "270.0 ~ 260" and "Resolution (Ap/Av)" with the value "1.12 ~ 1.68". At the bottom of the window, there are four buttons: "New Method" (with a document icon), "Open method" (with a folder icon), "Save method" (with a floppy disk icon), and "OK" (with a checkmark icon).

- 1) Click the cell in the **Standard** to enter standard name;
- 2) Click **Scanning Range** to set the scanning wavelength range;
- 3) Click **Resolution** to enter the allowable deviation for resolution.

7 Finished

Click the button **Save method** to save the verification method. Establishment of the validation method is complete.

Verify performance

1 Preparing

- The instrument must be warmed up for more than 30 minutes before performing performance verification.
- The instrument must first calibrate the dark current and the system baseline before verification.
- The standard material used for verification must be within the validity period of the test.

Note *Standard filters used to verify the performance of the instrument can be purchased separately from third parties or our company and are not configured with the instrument.*

2 Open the performance verification method

Performance Verification interface, Click the button **Method**, Open method to open a performance verification method, click the button .

Performance Verification

Wavelength Accuracy and Repeatability

Standard	Certified	Accuracy Allowed	Repeatability Allowed	Measured-1	Measured-2	Measured-3	Measured-4	Measured-5	Measured-6	Accuracy	Repeatability	Result
Holmium	241.2	0.3	0.1									
Holmium	278.1	0.3	0.1									
Holmium	287.6	0.3	0.1									
Holmium	333.5	0.3	0.1									
Holmium	361.1	0.3	0.1									
Holmium	416.6	0.3	0.1									
Holmium	451.3	0.3	0.1									
Holmium	485.3	0.3	0.1									
Holmium	536.9	0.3	0.1									

Photometric Accuracy and Repeatability

Standard	Wavelength (nm)	Certified(Abs)	Accuracy Allowed	Repeatability Allowed	Measured-1(Ab)	Measured-2(Ab)	Measured-3(Ab)	Measured-4(Ab)	Measured-5(Ab)	Measured-6(Ab)	Accuracy	Repeatability	Result
Neutral fil...	465.0	0.9547	0.008	SD/0.005									
Neutral fil...	546.0	1.0044	0.0081	RSD/0.5%									
Neutral fil...	590.0	1.1079	0.0081	RSD/0.5%									
Neutral fil...	635.0	1.1192	0.0081	RSD/0.5%									

Operations Method System Calibration

3 System calibration

Remove anything from the measurement and reference channels and close the sample chamber lid. **Performance Verification** interface, Click the button  to do system calibration.

4 Verify

Click the button **Measure** and follow the prompts of the software to put in the **reference** or **standard** to complete the test.

Troubleshooting

Review the information in the table below to troubleshoot operating problems.

Problem	Cause	Solution
Power on, no response	Power cord connection is not reliable.	Improve connectivity.
	Fuse burning.	Replace fuse.
Measurement uncertainty	Glass cuvettes used in UV Range	Use quartz cuvettes.
	Sample is not Stable.	Improve the sample.
	The concentration of sample is too high.	Diluted sample.
	Power Supply Voltage Low or not Stable.	Improve the Power Supply.
	Lamp damage or lamp life maturity.	Replace lamp.
Dark Current Error when self-check	The lid of the compartment is open during self-check.	Close the lid, restart.
System Calibrate Failed	Something block the Light path.	Remove it, calibrate again
Measurements inaccurate	Cuvettes were contaminated.	Clean cuvettes.
	Samples were contaminated.	Improve samples.
	Worse matching of the cuvettes.	Improve the matching of the cuvettes.
	Dark current error.	Resample dark current.

Repair and maintenance

Daily Maintain

Check the compartment

After measurement, the cuvettes with sample solutions should be taken out of the compartment in time. Or the volatilization of the solution would make the mirror go moldy. Users must pay more attention to the corrosive sample and liquid easy to volatilize. Any solution remains in the compartment should be wipe off immediately.

Surface clean

The cover of the instrument is with paint. Please use wet towel to wipe off the drips on the surface immediately. Organic solution is forbidden to be used to clean the cover. Please wipe off the dirt on the cover timely.

Clean the cuvettes

After every test or after a solution change, the cuvettes should be cleaned carefully, or the remains on the surface would cause measuring error.

Check Lamp

The light sources used in this instrument are consumables. It is recommended that you obtain a sufficient number of these parts, taking into account the frequency of use of the instrument.

Assuming that the instrument runs for 8 hours per day, the light source will be used for approximately 160 hours/month (20 working days) and approximately 1920 hours/year (240 working days). You need to replace the light source every 10 to 12 months.

Spare Parts Replacement

Replace the fuse



Danger! *Be sure to switch off the power and unplug the socket before replacement!*

1. Tools preparation

Prepare a 3×75 Flat Blade screwdriver.

2. Switch Off the power supply

Switch off the power supply, and unplug the socket.

3. Take out the Fuse Seat

Push the fuse case by using the screwdriver, and turn it counter clockwise, the fuse seat will pop out when released.



4. Replace a new fuse

Pick out the spare fuse (3.15A/250V) and replace it.



5. Reset the fuse seat

Replace the fuse seat in the power socket. Push the fuse case by using the screwdriver, and turn it clockwise, the fuse seat will be locked when released.



6. Switch on the power

Plug the socket and switch on the power.

Replace lamps



Hot!

Wait 20 minutes before open the lamp chamber after power off to avoid scald!

1. Tools preparation

Prepare a 6×150mm Flat Blade screwdriver and a pair of glove.

2. Power Off

Switch off the power supply and unplug the socket.

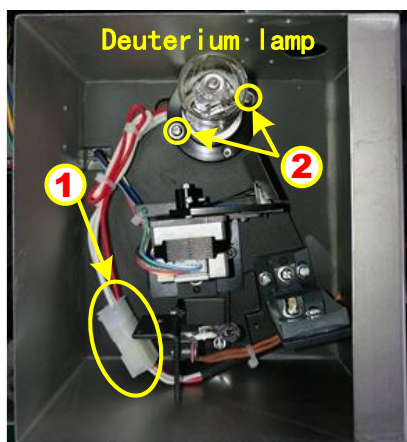
3. Open the cover

Loosen the indicated two screws and remove the lamp cover.



4. Replace the Deuterium lamp

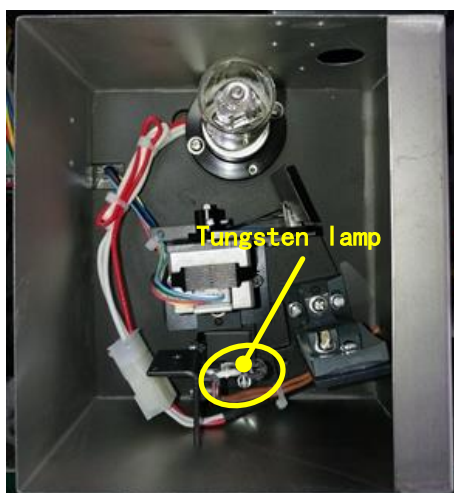
Unplug the connector(No. 1) . Unscrew the 2 screws on the Deuterium Flange (No. 2) and remove the Deuterium lamp. Draw on the cotton glove and replace a new lamp. Fix the 2 screws and plug the connector again.



5. Replace Tungsten lamp

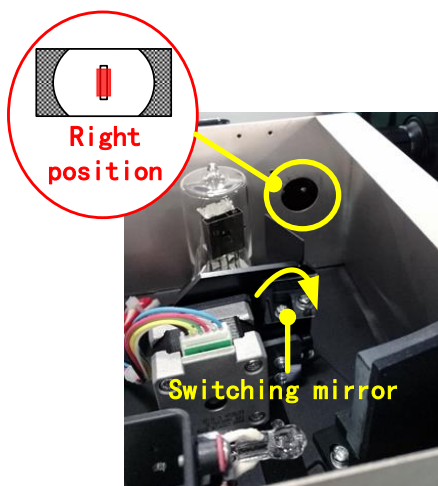
The Tungsten lamp is equipped with a blue-grey silicon coating by manufacturer. This coating is only a transport safety device. It can be removed with the first exchange of lamp.

Pull out the defected Tungsten lamp and draw on the cotton glove. Insert the new Tungsten lamp as deep as possible on the lamp seat.



6. Adjust the position of the Tungsten lamp

Switch on the power(the Switch Mirror should be placed to the position as indicates). Observe the entrance facular, and it should be in the center of the entrance hole. If the facular deviate to Left or Right, then loosen the two screws and move the lamp seat to Left or Right until it focus on the center of the slot. Then fix the screws.



7. Finish

Reset the cover of the light chamber and fix the screws. Reset the cover of the lamp room and fix the screws.

User replaceable accessories and spare parts

Description	Quantity	Cat. No.
CELL HOLDER, 4-CELL, 10MM	1PC	634-6003
CELL HOLDER, 4-CELL,10 TO 50MM	1PC	634-6004
CELL HOLDER, 4-CELL, 10 TO 100MM	1PC	634-6005
CELL HOLDER, FOR CYLINDRICAL CELL	1PC	634-6006
CELL HOLDER FOR TEST TUBES	1PC	634-6009
CELL HOLDER, WATER-JACKETED, 1 CELL, 10MM	1PC	634-1135
CELL HOLDER FOR MICRO CELLS,BEAM HEIGHT:15MM	1PC	634-0687
CELL HOLDER FOR TEST TUBES, D=16mm	1PC	634-1133
CELL HOLDER,8-POSITION AUTO CELL CHANGER, 10MM	1PC	634-1232
CELL HOLDER,5-POSITION AUTO CELL CHANGER, 10 TO 100MM	1PC	634-1233
CELL HOLDER, SOLID SAMPLE	1PC	634-6011
CELL HOLDER, WATER-JACKED, 4 CELL, 10MM	1PC	634-1134
CUVETTE, SQUARE.GLASS,10MM	4PCS	634-6013
CUVETTE, SQUARE.GLASS,20MM	2PCS	634-6014
CUVETTE, SQUARE.GLASS,30MM	2PCS	634-6015
CUVETTE, SQUARE.GLASS,50MM	2PCS	634-6016
CUVETTE, SQUARE.GLASS,100MM	1PC	634-6017
CUVETTE, SQUARE.QUARTZ,10MM	2PCS	634-6018
CUVETTE, SQUARE.QUARTZ,20MM	2PCS	634-6019
CUVETTE, SQUARE.QUARTZ,30MM	2PCS	634-6020
CUVETTE, SQUARE.QUARTZ,50MM	2PCS	634-6021
CUVETTE, SQUARE.QUARTZ,100MM	1PC	634-6022
CELL,QUARTZ, 100UL, 10MM, BEAM HEIGHT:15MM	1PC	634-0688
CELL,QUARTZ, 200UL, 10MM, BEAM HEIGHT:15MM	1PC	634-0689
CELL,QUARTZ, 500UL, 10MM	1PC	634-6025
FLOW CELL, 5 MM, GLASS, BEAM HEIGHT:15MM	1PC	634-0690
FLOW CELL, 10 MM, GLASS, BEAM HEIGHT:15MM	1PC	634-0691

FLOW CELL, 20 MM, GLASS, BEAM HEIGHT:15MM	1PC	634-0692
FLOW CELL, 30 MM, GLASS, BEAM HEIGHT:15MM	1PC	634-0693
FLOW CELL, 5 MM, QUARTZ, BEAM HEIGHT:15MM	1PC	634-0694
FLOW CELL, 10 MM, QUARTZ, BEAM HEIGHT:15MM	1PC	634-0695
FLOW CELL, 20 MM, QUARTZ, BEAM HEIGHT:15MM	1PC	634-0696
FLOW CELL, 30 MM, QUARTZ, BEAM HEIGHT:15MM	1PC	634-0697
SIPPER UNIT WITHOUT PELTIER TEMP. CONTROL, A-1101	1PC	634-1138
SIPPER UNIT WITH TEMP. CONTROL, A-1001	1PC	634-1139
PELTIER UNIT, A-1201	1PC	634-1140
SAMPLE ROOM PANEL WITH PORT	1PC	634-1143
FUSE, 3.15A/250V	1PC	634-0651
SOFTWARE UVSTUDIO STANDARD	1PC	634-1182
SOFTWARE UVSTUDIO AUDIT TRAIL	1PC	634-1183

Technical service

Web Resources

Visit the VWR website at www.vwr.com for:

- Complete technical service contact information
- Access to the VWR Online Catalogue, and information about accessories and related products
- Additional product information and special offers

Contact us For information or technical assistance contact your local VWR representative or visit www.vwr.com.

Warranty

VWR warrants that this product will be free from defects in material and workmanship for a period of two (2) years from date of delivery. Lamps have a warranty of 1000 h lamp usage time or 6 months max. If a defect is present, VWR will, at its option and cost, repair, replace, or refund the purchase price of this product to the customer, provided it is returned during the warranty period. This warranty does not apply if the product has been damaged by accident, abuse,

misuse, or misapplication, or from ordinary wear and tear. If the required maintenance and inspection services are not performed according to the manuals and any local regulations, such warranty turns invalid, except to the extent, the defect of the product is not due to such non-performance.

Items being returned must be insured by the customer against possible damage or loss. This warranty shall be limited to the aforementioned remedies. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY.

Compliance with local laws and regulations

The customer is responsible for applying for and obtaining the necessary regulatory approvals or other authorisations necessary to run or use the Product in its local environment. VWR will not be held liable for any related omission or for not obtaining the required approval or authorisation, unless any refusal is due to a defect of the product.

Equipment disposal



This equipment is marked with the crossed out wheeled bin symbol to indicate that this equipment must not be disposed of with unsorted waste.

Instead it's your responsibility to correctly dispose of your equipment at lifecycle -end by handling it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment.

For more information about where you can drop off your waste of equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

Thank you!

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