V-1200 Spectrophotometer

INSTRUCTION MANUAL

European Catalogue Number(s):

634-6000

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CE

Legal Address of Manufacturer

Europe

VWR International Europe bvba

Researchpark Haasrode 2020

Geldenaaksebaan 464

B 3001 Leuven

Tel.:+ 32 16 385 011

http://www.be.vwr.com

Made in China

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Safety Information

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 V-1200 Spectrophotometer.

- 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 is in any way 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.

- 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
Glass Cuvette	4PCS
Power Cord (Euro Plug)	1PC
Power Cord (UK Plug)	1PC
Power Cord (SW Plug)	1PC

Manual	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 your local VWR office and authorized contractual partners.

Installation

Placement

Place the instrument on the stable table carefully.

Install printer (Printer is Optional Accessories)

Check to confirm instrument power switch is turned off, connect the printer's data cable to the Instrument's parallel port.

Link 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.

Intended Use

V-1200 Spectrophotometer used in Chemistry, Pharmaceuticals, Biochemical, metallurgy, Light Industry, Textile, Material, Environments, Medical, Education and some other fields. It is one of the most important instruments in Quality Control and an essential in normal laboratories.

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

Specifications

Optical System	Single Beam
Wavelength Range	325-1000nm
Band Width	4nm
Stray Light	≤0.3%T
Photometric Range	0-200%T,-0.3-3.0A, 0-9999C
Wavelength Accuracy	±2nm
Photometric Accuracy	≤±0.5%T or 0.005A@1A
Stability	0.002A/h @ 500nm
Memory	200 Results & 200 Standard Curves
Language	English, French, German, Spanish
Display	128×64 Dots Matrix LCD
Interface	USB, Parallel
Measuring Procedure:	Photometry
	Quantitation
Power Supply	AC 110/220V, 50/60Hz
Dimension	490×360×210mm
Weight	12kg

This instrument is compliant to the European Directives on

Low Voltage Directive 2006/95/EC

Electromagnetic compatibility 2004/108/EC

Restriction on use of Hazardous Substances RoHS 2002/95/EC

and theirs amandements.

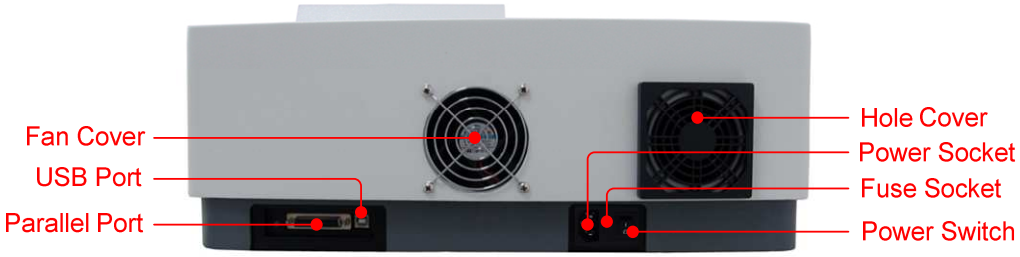
Overview

V-1200 Spectrophotometer has the characters of wide range of wavelength, high sensitivity, powerful function, easy to use, simple structure and pretty figure. Besides these, the large LCD, High Precise A/D and easy to store RAM makes the instrument much more superior than other originals. It is widely used in Chemistry, Pharmaceuticals, Biochemical, metallurgy, Light Industry, Textile, Material, Environments, Medical, Education and some other fields. It is one of the most important instruments in Quality Control and an essential in normal laboratories.

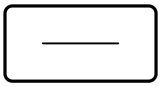
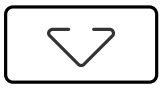
Description of Buttons and Switches

Front View

Rear View



Operational Keys

Key	Functions
	**FUNCTION: Functions on-screen prompts**
	PRINT: Print measuring result
	ZERO: Blank
	SET: Set Parameters
	GOTO ʎ : Set Wavelength
, 	**UP, DOWN: Scroll menu/data and set Y scale**

Getting Started

The following chart describes the basic operation of the instrument.

Turn On and Self-check

Switch on the power. Then the instrument begins to self-check and 15 minutes' warm up. Self-check includes the following steps: Turn on Lamp → Check Sensor → System Position → initialize A/D → Get Dark Current.

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.

General Operating Instructions

Select Application

Main interface, press the key (left) to enter into.

Set Wavelength

Test Interface, press key to set wavelength, , to modify wavelength value, then press key (left) to go to wavelength and blank.

Set Parameters

Press enter into setup interface, , to select items or input parameters, (left) to confirm.

Delete the test result and stored data

Test Interface, press key , then press key , to select ”Clear Data, not Print ”, (left) to delete.

Blank

Put the Reference in the light path, press [ZERO] to do blank.

Measure Samples

Put the samples in the light path, press [—] (left) to measure.

Print the test results

Test Interface, press key [PRINT] , [△], [▽] select “Print, clear data”, press key [—] (left) to print.

Store the Standard Curve

After got the Standard Curve by Marked, press [△], [▽] input the file name and press [—] (left) to save.

Load the Standard Curve

“Quantitative” interface, press [△], [▽] to select “Load Curve”, press [△], [▽] to choose the curve you want, press [—] (left) to open.

Operation

Self-check

Remove all the blocks in the light path and close the lid of the compartment; Switch on the power supply to begin the self-check.

Warm up

After self-test, the instrument goes into pre-warm state. For accurate test, at least 30 minutes of warm up is required.

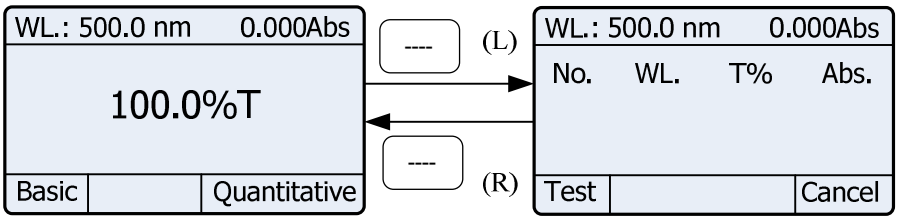
Check the cuvettes

The cuvettes must be clear and there's no remains of the samples on the surface of it.

Photometry

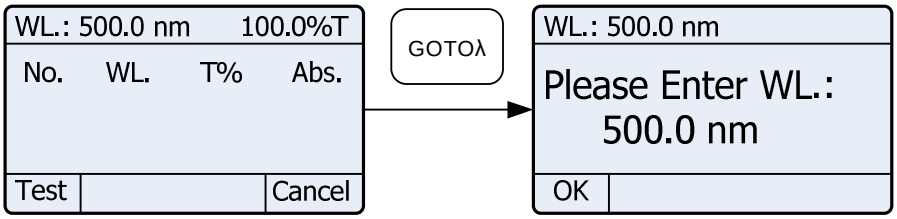
1. Enter into Photometry

"Main menu" [—] (left) Enter "Basic".



2. Set Wavelength

Press [GOTOλ] to set wavelength, press [△], [▽] to input wavelength value, press [—] (left) to go to the reference value.



3. Blank

Put the blank cuvette into the light path, then press [ZERO] to do blank.

4. Test sample

Put the sample into light path, press [—] (left) to test, the result will be displayed in the data list, repeat this step to test all the samples.

5. Print Test Results

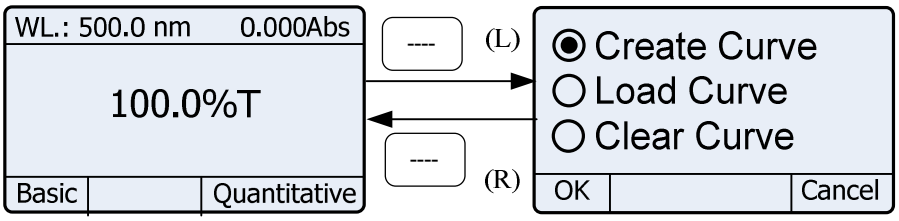
Press the key [PRINT] , [△], [▽] select “Print, clear data”, press key [—] (left) to print.

```
Photometry
Date&Time: mm-dd-yyyy, hh:mm:ss
Model: V-1200
Serial No.: VECXXXXXXX
Firmware Version: 2.5.0
VWR International bvba.
No.   WL.(nm)    Abs     %T
1          500.0   0.000  100.0
2          500.0   0.000  100.0
3          500.0   0.000  100.0
End.
```

Quantitative Mode

1. Enter into Quantitative Mode

“Main menu” , press [—] (right) to enter into “Quantitative”.

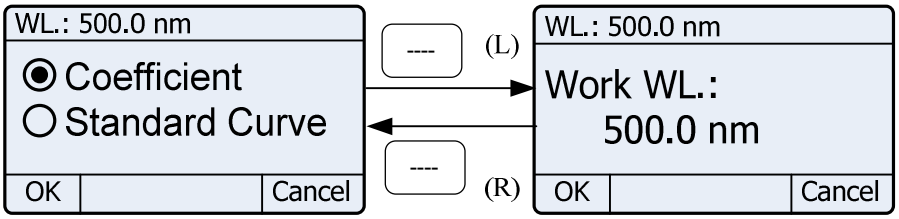


2. Build standard curve or use the saved standard curve

There are two methods to build standard curve, you can choose one method according to your situation:

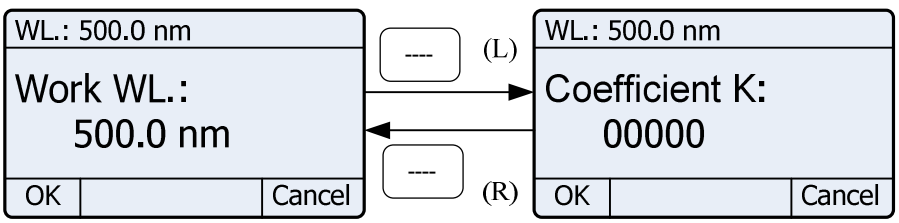
Input Coefficient:

1) **Choose Coefficient.** Press , to choose “build standard curve”, press , to choose ”coefficient”.



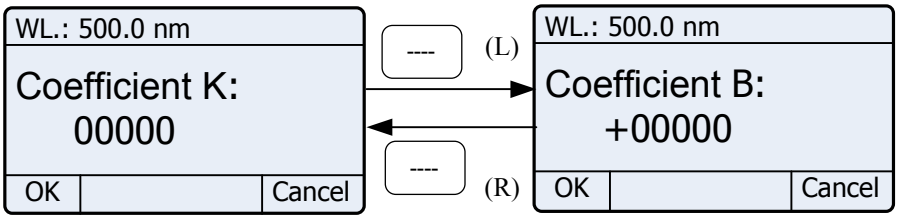
2) **Set wavelength.** Press , to input test wavelength value, press (left) to confirm.

3) **Set test coefficient K.** Press , to input test coefficient K, press (left)to confirm.



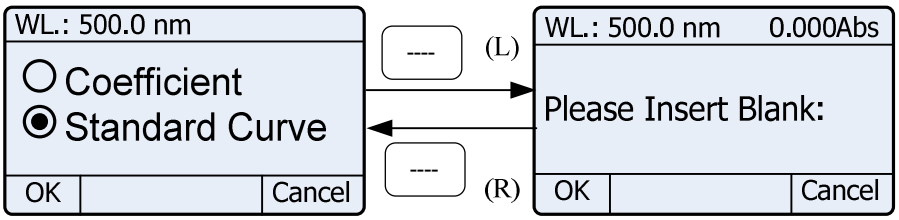
4) **Set test coefficient B.** Press , to input test coefficient B value,

press [—] (left)to confirm to finish setting of this method, the curve will be displayed in the screen.

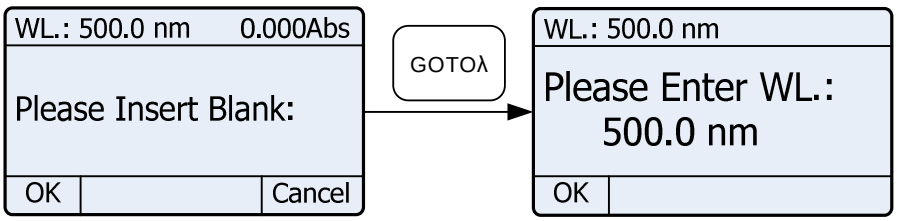


Create Standard Curve:

1) **Choose Create Curve.** Press [△], [▽] to choose ”Create Curve ”, press [△], [▽] to choose “Standard Curve”, press [—] (left) to enter into.

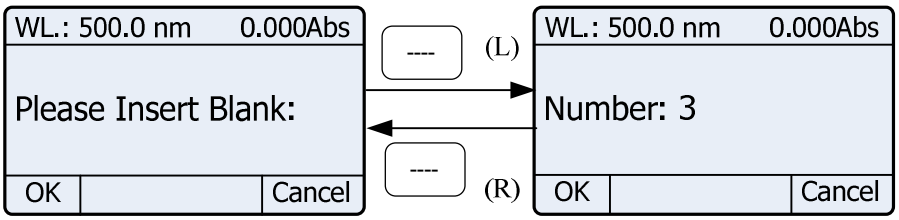


2) **Set wavelength.** Press [GOTOλ] to enter to set wavelength, Press [△], [▽] to input wavelength value, press [—] (left) to go the setting value.

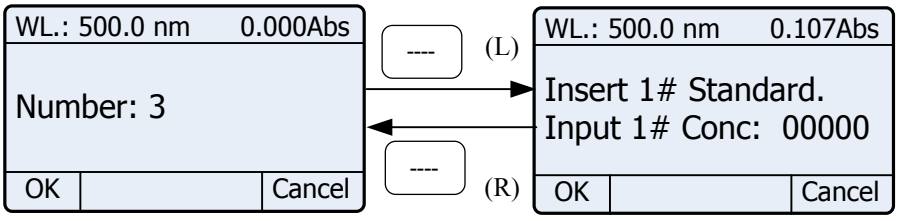


3) **Blank.** Pull the blank sample in light path, press [—] (left) to do blank.

4) **Input the number of standards.** Press [△], [▽] to input the quantity of standard sample(Not more than 9 standard curve), press [—] (left) to confirm.

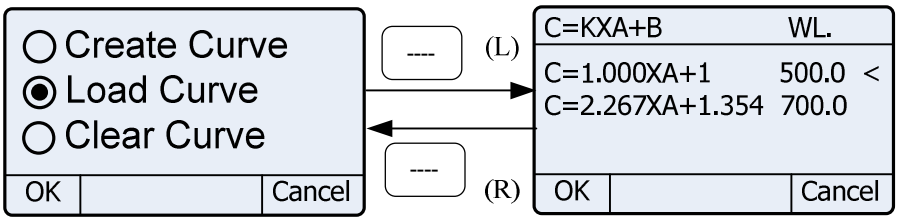


5) **Input the concentration of standards.** When you have finished the last step, the system will ask you to input the standards' sample in the light path, press [△], [▽] to input the concentration, press [—] (left) to confirm, to finish al the standard sample. It will appear a Save Information. press [△], [▽] to input the name, press [—] (left) to confirm, and press [—] (left) again to finish save.

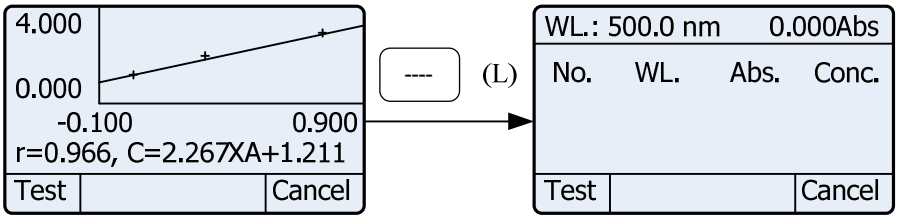


Load curve:

Press [△], [▽] to choose ”Load Curve”, press [△], [▽] to choose the cursor, press [—] (left)to confirm.



Press [—] (left) to enter the test mode after building or loading standard curve.



3. Blank.

Put reference into light path, press [ZERO] to do blank.

4. Using standard curve to test sample.

Put samples into light path, Press [—] (left) to test result will be displayed in the data list. Repeat this step to finish all samples test.

5. Print Test Results

Press the key [PRINT], [△], [▽] select “Print, clear data”, press key [—]

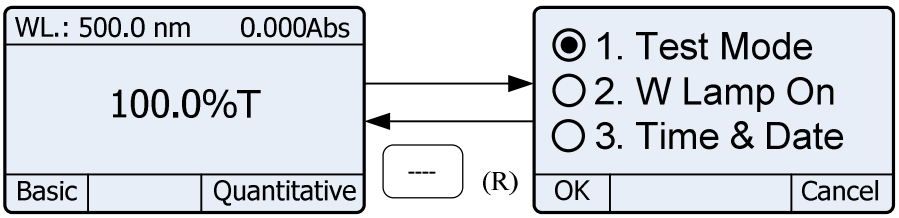
(left) to print.

```
Quantitation
Date&Time: mm-dd-yyyy, hh:mm:ss
Model: V-1200
Serial No.: VECXXXXXXX
Firmware Version: 2.5.0
VWR International bvba.
C=1.000*A+1.000
r=1.0000
No.   WL.(nm)    Abs     Conc.
1          500.0  0.120    1.120
2          500.0  0.127    1.127
3          500.0  0.121    1.121
End.
```

System Utility

Users can set the system utilities according their own situation.

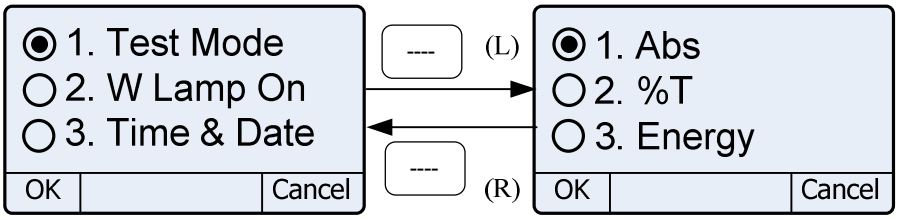
”Main menu” Press [SET] to go into utility setting.



Test Mode

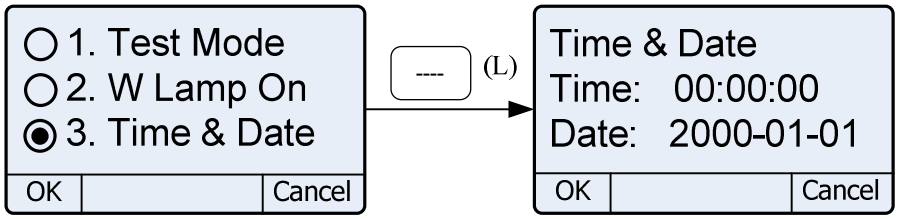
Press [△], [▽] to choose “Test Mode”, press [—] (left) to enter, press

[△], [▽] to choose “Abs”, ”%T”, ”Energy”, press [—] (left) to confirm.



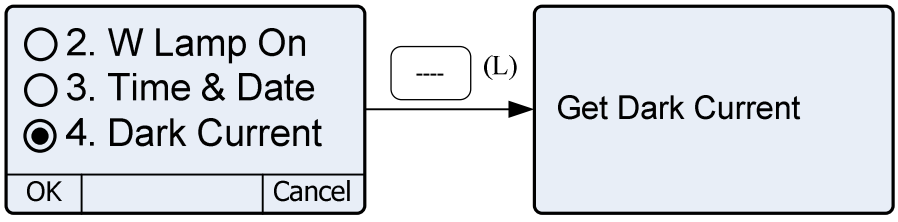
Edit Clock

Press ▲, ▼ to choose “Time & Date”, press — (left) to enter into, press ▲, ▼ to input value, SET to set next item, press — (left) to confirm and return.



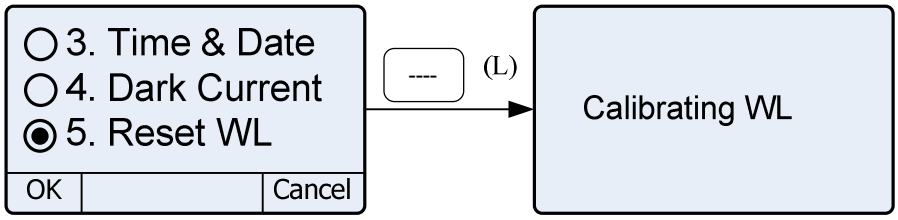
Refresh Dark Current

Press ▲, ▼ to choose “Refresh Dark Current”, press — (left)to confirm(Be sure that the sample room is closed during the whole refreshing course), return after finish this.



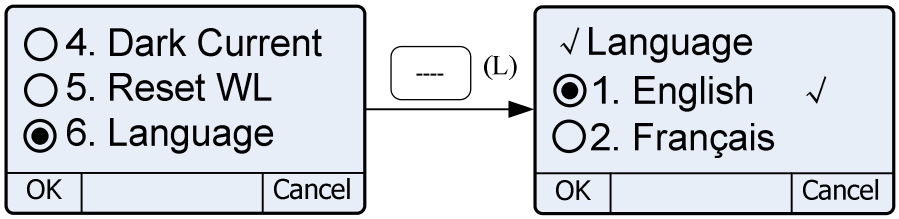
Reset WL

Check the sample room first, and then close it. Press , to choose “Reset WL”, press (left) to calibrate, be sure that the sample room is closed during the whole refreshing course, come back after finish this.



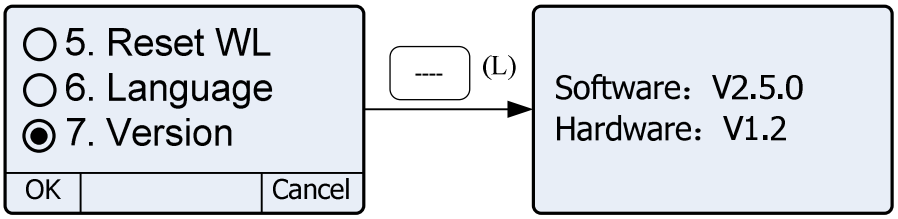
Select Language

Press , to choose Language (English, French, German or Spanish), press (left) to enter into, press , to select. (left) to confirm.



About Version

Press , to choose “Version”, press (left)to view version information, press any key to return.



Load Default Parameter

Main Interface, press PRINT + GOTO∧ , all parameters will be restored to factory setting and the Instrument will restart.

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	Warm up is not enough	Warm up more time
	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
Power on, back light is	Display Contrast problem	Adjust the contrast potentiometer

OK, but nothing display on the screen or display is not clear		
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.

Spare Parts Replacement

Replace the fuse

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

1. **Tools preparation**

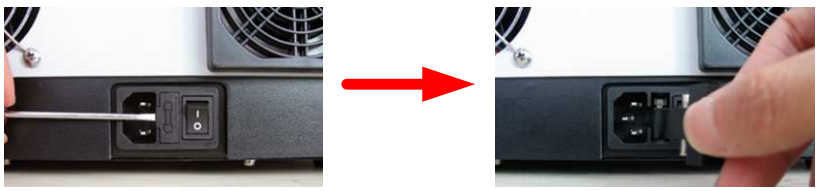
   Prepare a 3×75 Flat Blade screwdriver**.**

2. **Switch Off the power supply**

   Switch off the power supply, and unplug the socket.

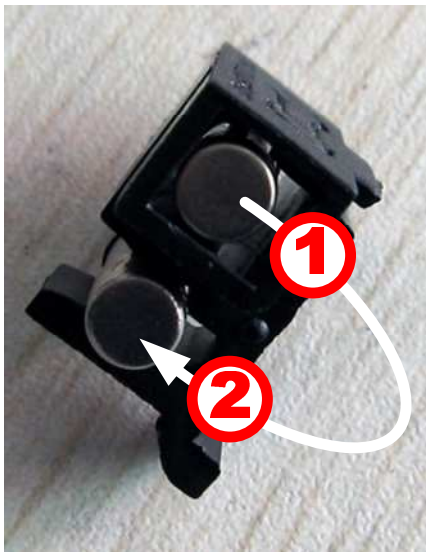
3. **Take out the Fuse Seat**

   Take out the fuse seat by the screwdriver.



4. **Replace a new fuse**

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



5. **Reset the fuse seat**

Replace the fuse seat in the power socket.

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 Cross Blade screwdriver and a pair of glove.

2. **Power Off**

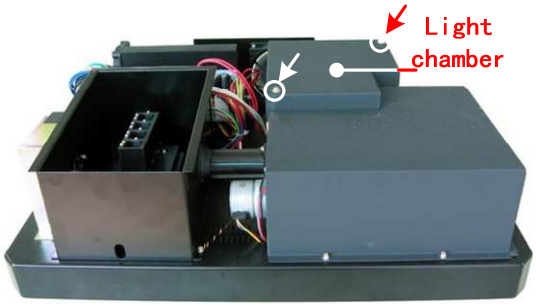
   Switch off the power supply and unplug the socket.

3. **Open the cover**

   Unscrew the 4 screws indicated(Each side with 2 screws)and remove the cover.

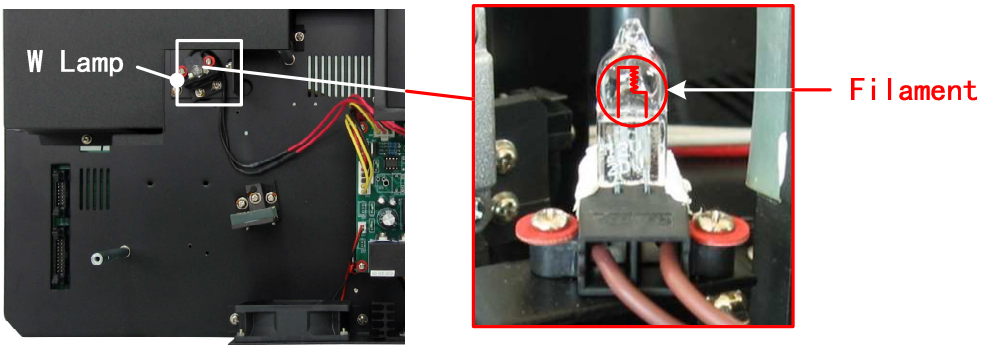
4. **Open the cover of the light chamber**

   Unscrew the 2 screws on the light chamber cover and remove it.



5. Replace W lamp

Pull out the defected W lamp and draw on the cotton glove. Insert the new W lamp as deep as possible on the lamp seat. Be sure to keep the filament in the same direction as the old one face. Switch on Power, check the light spot is in the middle of the entrance slit.



6. Finish

Reset the cover of the light chamber and fix the screws. Reset the cover of the instrument and fix the screws. Recover the Pole in the compartment, then the course finished.

Replace the Battery

Be sure to switch off the power supply and unplug the socket before open the Bottom Cover！

1. **Prepare the tools**

   Prepare a 6×150mm Cross Blade Screwdriver.

2. **Switch off the power supply**

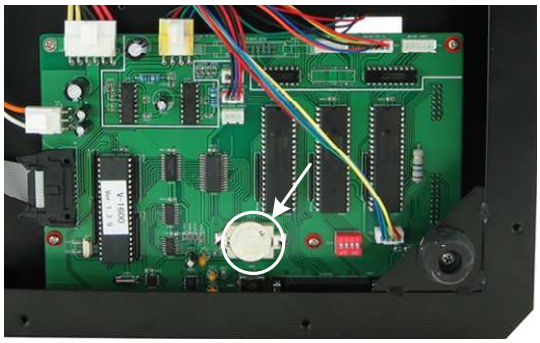
   Switch off the power supply and unplug the socket

3. **Open the Bottom cover plate**

   Unscrew all the screws indicated then remove the bottom plate.

4. **Replace the Battery**

   Pick out the old battery and replace a new one.



5. **Finish**

   Recover the bottom plate and fix all the screws, then the course finishes.

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 MICRO CELLS	1PC	634-6008
CELL HOLDER FOR TEST TUBES	1PC	634-6009
CELL HOLDER, SOLID SAMPLE, 10MM	1PC	634-6011
CUVETTE, SQUARE.GLASS,10MM	4PCS	634-6012
CUVETTE, SQUARE.GLASS,20MM	2PCS	634-6013
CUVETTE, SQUARE.GLASS,30MM	2PCS	634-6014
CUVETTE, SQUARE.GLASS,50MM	2PCS	634-6015
CUVETTE, SQUARE.GLASS,100MM	1PC	634-6016
PRINTER, THERMAL PRINTER	1PC	634-6017
LAMP, HALOGEN, 12V20W	1PC	634-6037
FUSE, 3.15A/250V	1PC	634-0651
BATTERY, 3.6V, CR2032	1PC	634-0653

Technical Service

Web Resources

Visit the VWR's website at **www.vwr.com** for:

- Complete technical service contact information
- Access to VWR's 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 International warrants that this product will be free from defects in material and workmanship for a period of two (2) years from date of purchase. If a defect is present, VWR will, at its option, repair, replace, or refund the purchase price of this product at no charge to you, 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.

For your protection, items being returned must be insured against possible damage or loss. This warranty shall be limited to the replacement of defective products. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY.

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

Local VWR offices in Europe and Asia Pacific

Austria

VWR International GmbH
Graumanngasse 7
1150 Wien
Tel.: 01 97 002 0
Fax: 01 97 002 600
E-mail: info@at.vwr.com

Belgium

VWR International bvba
Researchpark Haasrode 2020
Geldenaaksebaan 464
3001 Leuven
Tel.: 016 385 011
Fax: 016 385 385
E-mail:
customerservice@be.vwr.com

China

VWR International China Co., Ltd
Suite 1802 - 1803,
Xing Ye Bank Mansion, No 168,
168 Jiangning Road
Shanghai 200041, China
Tel.: +86- 21 521 388 22
Fax: +86- 21 521 33 933
E-mail: sales_china@vwr.com

Denmark

VWR - Bie & Berntsen
Transformervej 8
2730 Herlev
Tel.: 43 86 87 88
Fax: 43 86 87 90
E-mail: info@dk.vwr.com

Finland

VWR International Oy
Valimotie 9
00380 Helsinki
Tel.: +358 9 80 45 51
Fax: +358 9 80 45 52 00
E-mail: info@fi.vwr.com

France

VWR International S.A.S.
Le Périgares – Bâtiment B
201, rue Carnot
94126 Fontenay-sous-Bois cedex
Tel.: 0 825 02 30 30 (0,15 EUR TTC/min)
Fax: 0 825 02 30 35 (0,15 EUR TTC/min)
E-mail: info@fr.vwr.com

Germany

VWR International GmbH
Hilpertstrasse 20a
D - 64295 Darmstadt
Tel.: 0180 570 20 00*
Fax: 0180 570 22 22*
E-mail: info@de.vwr.com
*0,14 €/Min. aus d. dt. Festnetz,
Mobilfunk max. 0,42 €/Min.

Hungary

Spektrum-3D Ltd.
A VWR International Company
Simon László u. 4.
4034 Debrecen
Tel.: (52) 521-131
Fax: (52) 470-069
E-mail: info@spektrum-3d.hu

India

VWR Lab Products Pte Ltd
2nd Floor, Front Wing, 135/12, Brigade Towers
Brigade Road
Bangaluru 560025 India
Tel: +91-2522-277876 (Mumbai)
Tel: +91-80-41117124 (Bangalore)
Fax +91-80-41117120
E-mail: vwr_india@vwr.com

Ireland / Northern Ireland

VWR International Ltd / VWR International (Northern Ireland) Ltd
Orion Business Campus
Northwest Business Park
Ballycoolin
Dublin 15
Tel.: 01 88 22 222
Fax: 01 88 22 333
E-mail sales@ie.vwr.com

Italy

VWR International s.r.l.
Via Stephenson 94
20157 Milano (MI)
Tel.: 02 332 03 11
Fax: 800 152 999
E-mail: info@it.vwr.com

The Netherlands

VWR International B.V.
Postbus 8198
1005 AD Amsterdam
Tel.: 020 4808 400
Fax: 020 4808 480
E-mail: info@nl.vwr.com

Norway

VWR International AS
Haavard Martinsensvei 30
0978 Oslo
Tel.: 02290
Fax: 815 00 940
E-mail: info@no.vwr.com

Portugal

VWR International - Material de Laboratório, Lda
Edifício Neopark
Av. Tomás Ribeiro, 43- 3 D
2790-221 Carnaxide
Tel.: 21 3600 770
Fax: 21 3600 798/9
E-mail: info@pt.vwr.com

Singapore

VWR Singapore Pte Ltd
18 Gul Drive
Singapore 629468
Tel: +65 6505 0760
Fax: +65 6264 3780
E-mail: sales@sg.vwr.com

Spain

VWR International Eurolab S.L.
Ronda Can Fatjó, nº 11
Edifici Tecnopark, 3
Parc Tecnològic del Vallés
08290 Cerdanyola del Vallés (Barcelona)
Tel.: 902 222 897
Fax: 902 430 657
E-mail: info@es.vwr.com

Sweden

VWR International AB
Fagerstagatan 18a
163 94 Stockholm
Tel.: 08 621 34 00
Fax: 08 621 34 66
E-mail: info@se.vwr.com

Switzerland

VWR International AG
Lerzenstrasse 16/18
8953 Dietikon
Tel.: 044 745 13 13
Fax: 044 745 13 10
E-mail: info@ch.vwr.com

UK

VWR International Ltd
Customer Service Centre
Hunter Boulevard
Magna Park
Lutterworth
Leicestershire
LE17 4XN
Tel.: 0800 22 33 44
Fax: 01455 55 85 86
E-mail: uksales@uk.vwr.com