

Optical Measuring Instrument Accessory

Instruction Manual

USPM-RU-W series USPM-TU

Before use

Thank you for purchasing our transmit unit. In order to use this product safely and to maximize the benefits from doing so, be sure to read this instruction manual completely before use. This manual describes only the contents of the transmit unit, thus read this manual together with the “**instruction manual for the NIR Micro-spectrophotometer USPM-W-B**” in the attached sheet.

Please keep this manual close at hand when using the product, and store it carefully for future reference after you have read it.

This instruction manual contains a warranty card (on page 5). Confirm and fill in the necessary items and store the warranty card in a safe place.

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▪ To customers who execute micro-spectrometry by placing a sample on the tilt stage	
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Description of Precautions, Rated Display, and Symbol Marks

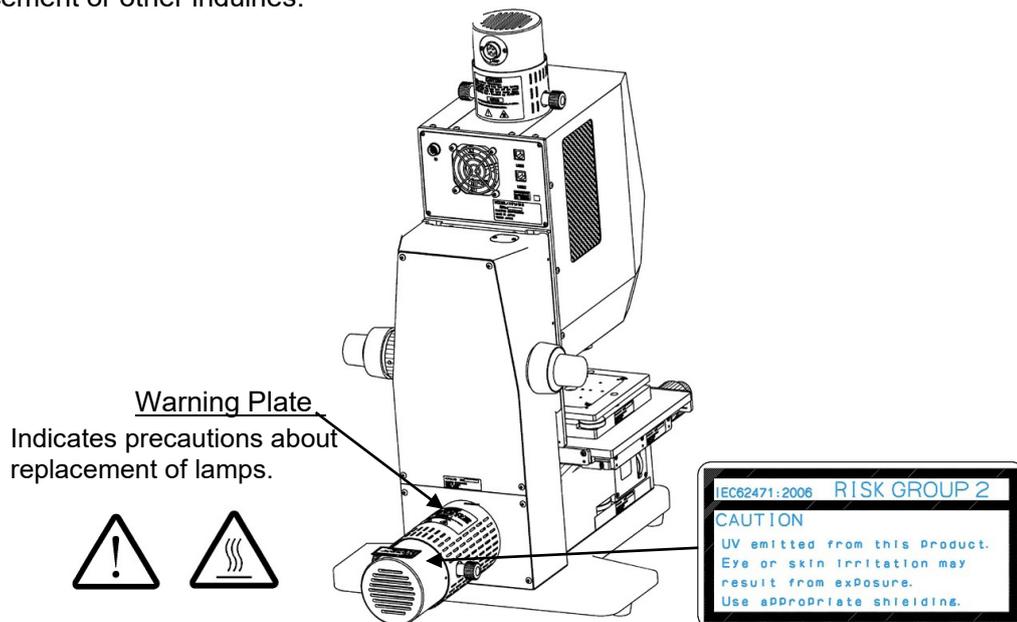
[Symbol marks regarding safety]

The marks below are displayed on the NIR Micro-spectrophotometer itself. Understand the meaning of the marks and handle the unit carefully.

Mark	Description
	Do not touch because the surface is hot. Otherwise you can get burned.
	Indicates a warning or caution covering a wide range; observe the direction described along with this mark on the product itself or in the instruction manual.
	This indicates that the main switch is ON.
	This indicates that the main switch is OFF.

[Location of warning labels displayed]

Warning labels are displayed at the following locations. If a warning label is not present, or if it gets dirty or comes unstuck, contact the retailer or our service department for replacement or other inquiries.



This product corresponds to RISK GROUP2 in the UV range (200-400nm) based on IEC62471-2. In addition, this product corresponds to RISK GROUP1 in the blue light range (300-700nm).

[Symbol marks related to packaging]

The meanings of symbol marks indicated on the package of this product are as follows.



Indicates the proper upper direction of the packaged cargo



Indicates that the packaged cargo must not be exposed to rain



Indicates that packaged cargo must be carefully handled because contents are easily damaged



Indicates the recycle mark indicating compliance with China RoHS

Safety Precautions

Intended purpose of this product

The purpose of this product is to measure spectral transmission factors through the combined use of the “NIR Micro-spectrophotometer (USPM-W-B)” as specified by our company. Do not use this product for any use other than this intended purpose. See the instruction manual of the main set regarding how to use the “NIR Micro-spectrophotometer (USPM-W-B).”

About this instruction manual

This instruction manual contains information essentially required when using this product safely and effectively. Prior to use, be sure to thoroughly read this manual and the instruction manual for the related equipment used simultaneously with this product, fully understand their contents and follow the instructions during use.

Using this product in any way not described in this manual cannot guarantee safety. Store this manual and the instruction manual for the related equipment simultaneously used in a location where you can refer to them immediately. Contact the retailer or our service department if you have any questions regarding the contents of this instruction manual.

Prohibition of repairs or modifications to the product

Never disassemble and remodel this product except for when replacing consumables, as this may result in damage to the user or the equipment. Functions also cannot be secured. Take measures according to “6. If Abnormality Occurs” if you judge that repair is necessary. If impossible, contact the retailer or our service department without using this product.

Warning indications in this manual

In this manual, the symbol marks and terms below are used in accordance with descriptive contents. The symbol marks and terms are described for each safety level. To use this product safely and properly, thoroughly understand the contents of symbol marks and terms.



Indicates that failure to observe this warning may result in serious personal injury or death.



Indicates that failure to observe this caution may result in moderate human injury or material damage.

■ Symbols denoting prohibition (prohibited actions)



Prohibited



Disassembly
prohibited

■ Symbols denoting obligation (mandatory actions)



Mandatory



Unplugged



Grounded

■ Symbols denoting caution



Caution



Caution against
ignition



Caution against
electric shock

General cautions on handling this product

Make confirmation through the combined use of the **“general cautions on handling this product”** in the instruction manual of the NIR Micro-spectrophotometer USPM-W-B.

Observe the cautions below when handling this product. Notice that each chapter also describes each caution.



Prohibited

■ Gently operate each adjustment knob.

Gently turn the adjustment knobs used for the transmit unit, the tilt stage, and the polarization unit. Applying excessive force while turning these knobs may result in damage to the knob screws, necessitating their replacement.

Do not attempt to rotate knobs over their respective stroke ends.

About warranty

(1) Warranty form

***** WARRANTY CARD *****			
PRODUCT NAME: Transmittance Measurement Unit			
MODEL NAME: USPM-TU			
Serial number _____			
* The serial number is to be written in by the customer.			
Customer information _____			
Name _____			
Address _____			
Phone Number _____			
(Warranty Period)	One year from the date of purchase or after 2,000 usage hours, whichever comes first.		
(Date of Purchase)	(Month)	(Date),	(Year)
(Vendor)	_____		

(2) Warranty conditions

This warranty guarantees free repair under the conditions described below.

(Conditions regarding free-of-charge repair)

- 1) EVIDENT Corporation will repair free of charge any problem due to failure in manufacturing, provided that it has occurred during correct usage compliant with the manual and warning labels during the warranty period.
- 2) We do not warrant any failure due to other causes (e.g., peripheral device(s) or the environment at the installation site).
- 3) Regardless of the warranty period, repairing the following problems will not be free of charge.
 - Defects or damage due to the incorrect use of the device;
 - Defects or damage due to any act of god (lightening or flood) or other unforeseen accidents;
 - Defects or damage due to use of apparatus other than this device;
 - Defects or damage to any part or component that is repaired, adjusted, or modified by anyone other than EVIDENT service personnel, or defect or damage due to such repair, adjustment, or modification;
 - Defects or damage to a product in which the serial number has been deliberately changed or removed; or
 - Defects or damage to maintenance parts (treated as consumable items).

4) For details on how to have defects repaired overseas, consult the contact point listed in the attached sheet.

* The warranty card guarantees any free-of-charge repair under the terms and conditions specified in this document. The warranty is not intended to restrict the right of the customer. Even after the warranty period, any questions to the contact point listed in the attached sheet will be welcomed.

- Although we took substantial measures to confirm the accuracy of the contents of this document, if you discover any unclear point or mistakes/omissions, please consult with the contact point listed in the attached sheet.
- Regardless of the preceding provision, we will take no responsibility for any impact from an approved conclusion.

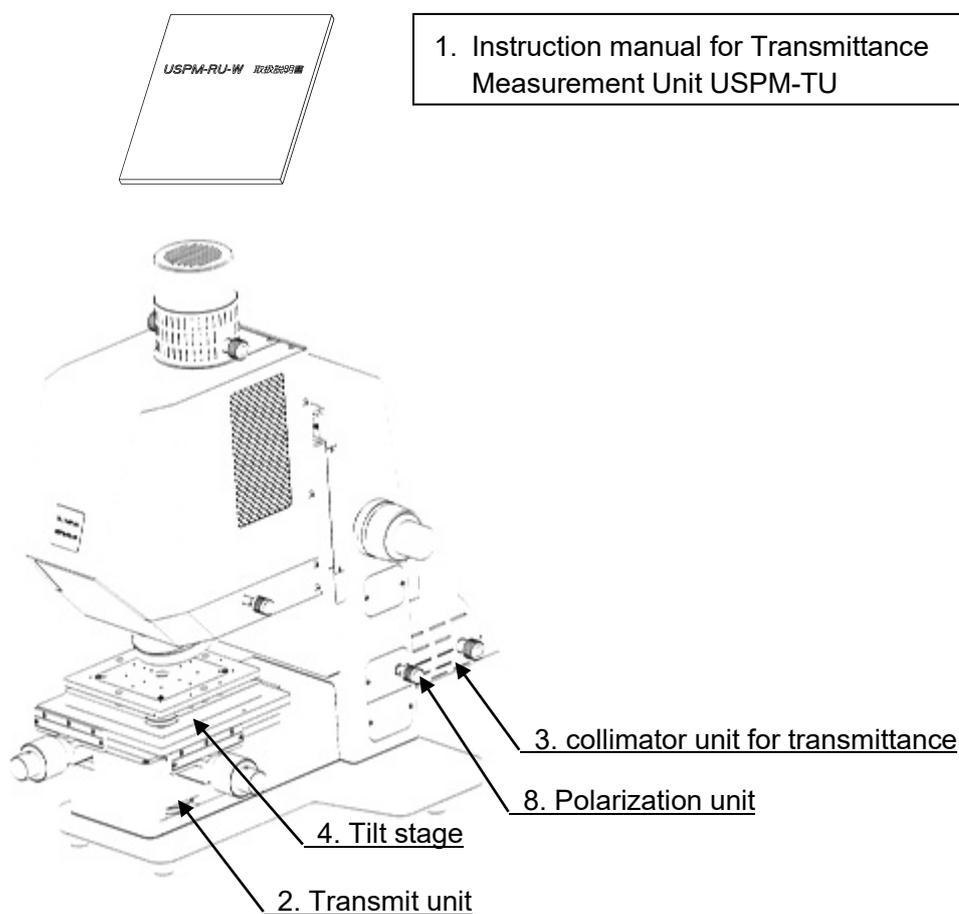
Features of this Product

The transmit unit consists of an optional unit that enables the measurement of a spectral transmission factor when it is installed into the NIR Micro-spectrophotometer (USPM-W-B). Relative measurement for calculating the spectral transmission factor of a test object is performed with the spectral transmission factor, in the state where the test object is not arranged, as standard.

1. Confirmation of Packaged Products

Make confirmation through the combined use of “1. Confirmation of Packaged Products” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B.

Make sure, according to the table below, that the main set and supplied accessories are completely received and check whether products are missing or damaged. Contact the retailer or our service department immediately without using the products if parts are missing or damaged or if you have any questions regarding them.



5. Lamp housing



6. Lamp cable



7. Halogen lamp

[Packing box for the transmit unit]

	Name	Quantity	Remarks
1	Instruction manual for Transmittance Measurement Unit USPM-TU	1	This document
2	Transmit unit *1	1	

[Packing box for the collimator unit for transmittance and tilt stage]

	Name	Quantity	Remarks
3	collimator unit for transmittance*1	1	
4	Tilt stage *1	1	
5	Lamp housing	1	
6	Lamp cable	1	
7	Halogen lamp (exclusively used for this device)	5	Four auxiliary halogen lamps

[Packing box for the polarization unit] *Option

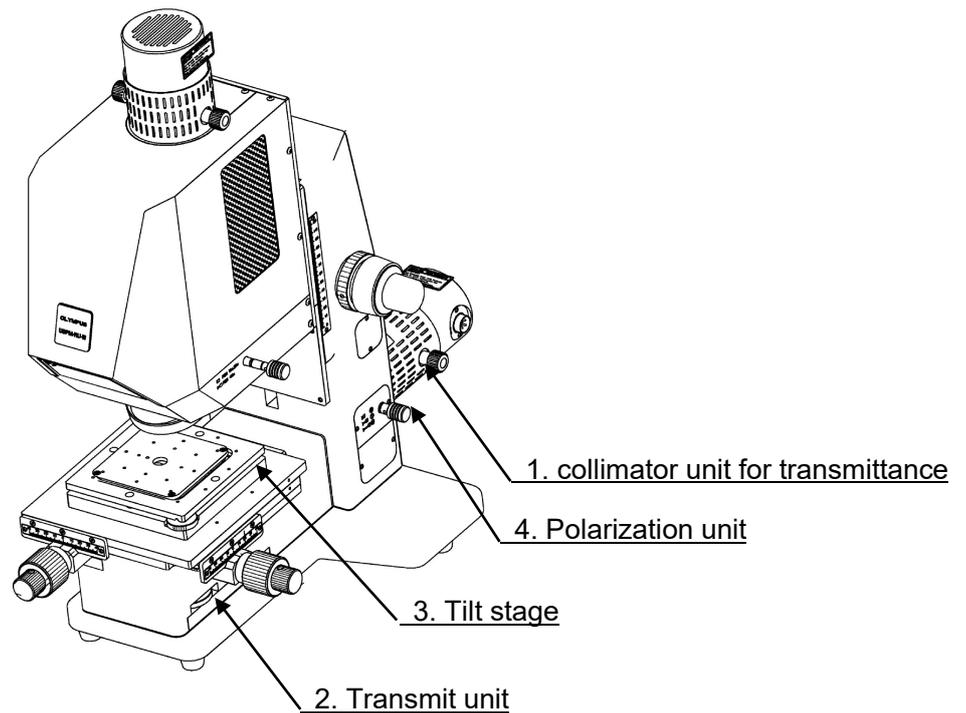
	Name	Quantity	Remarks
8	Polarization unit *1	1	

*1 These items are to be attached to the USPM-W-B main unit by a service person.

2. Part Names and Functions/Specifications

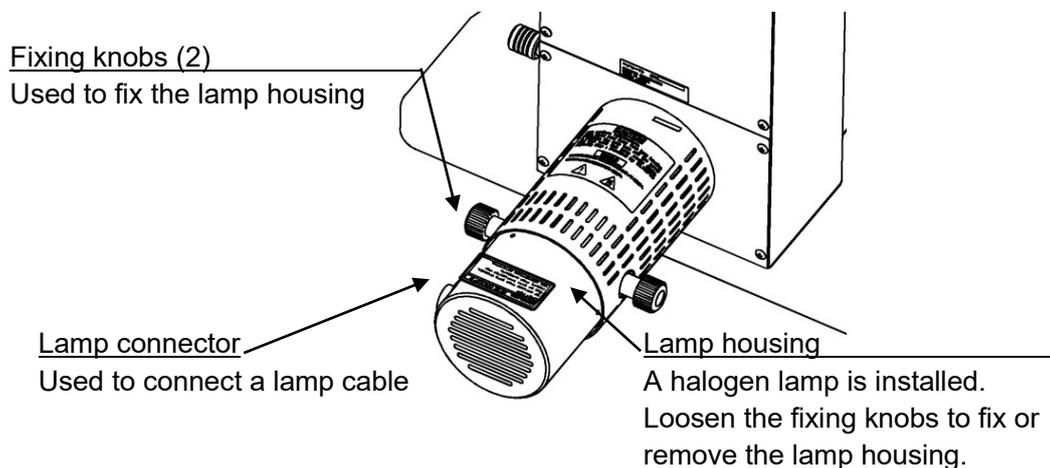
2.1. Main unit part names and functions

Make confirmation through the combined use of **“2.1 Main unit part names and functions”** in the instruction manual for the NIR Micro-spectrophotometer **USPM-W-B.**



The function and operation of these parts are described below.

1. collimator unit for transmittance
This consists of a light source unit used for optional transmission measurement and 45-degree measurement. Fix the lamp housing using the (two) fixing knobs. For more details, see “3. Equipment Installation and Connection.”

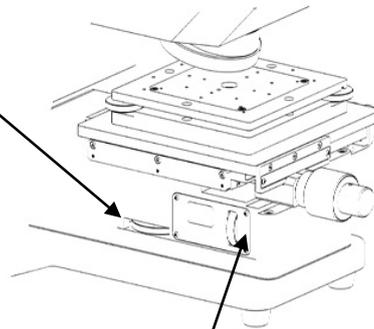


2. Transmit unit

This unit adjusts the outgoing beams using tilt and shift adjustment knobs.

Tilt adjustment knob

Adjusts the position of the outgoing beams back and forth



Shift adjustment knob

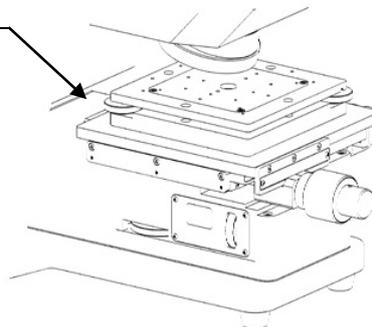
Adjusts the position of the outgoing beams back and forth

3. Tilt stage

The tilt stage adjusts the tilt of the two axes to an optical axis using a tilt stage adjustment knob.

Tilt stage adjustment knob

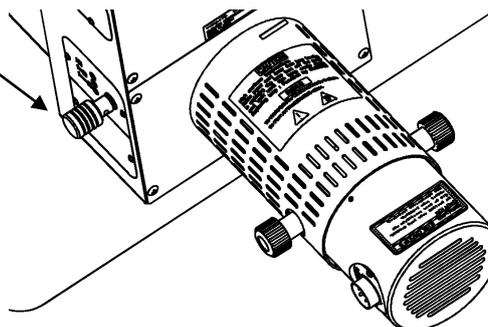
Adjusts the tilt of the two axes to an optical axis



4. Polarization unit

This unit adjusts the polarization state to P, S, or random polarization using a polarization switching knob.

Polarization switching knob



2.2. Product specifications

Make confirmation through the combined use of **“2.3 Product specifications” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B.**

The descriptive contents correspond to the specifications required when the transmit unit for the NIR Micro-spectrophotometer is incorporated into the device.

Items	Specifications
Name	Transmittance Measurement Unit
Type	USPM-TU
Wavelength range	380 to 1050 nm
Wavelength resolution	Approx. 5 nm (Wavelength display resolution: 1 nm)
Repeatability(3 σ)	$\pm 0.3[\%]$ or less (430-1010 nm), $\pm 1.0[\%]$ or less (in other ranges)
Aperture	Approx. 2.0 mm in diameter
Tilt stage	Loading surface size: 140 (W) \times 140 (D)mm Withstand load: 1 kg Operating range: (XT) $\pm 1^\circ$, (YT) $\pm 1^\circ$
Device weight	Main set: Approx. 31 kg (not including the computer) Controller supply unit: Approx. 6.7 kg
Device dimensions	Main set: 360 (W) \times 631 (D) \times 606 (H) Controller supply unit: 250 (W) \times 270 (D) \times 125 (H)

3. Equipment Installation and Connection

3.1. Equipment transportation and installation

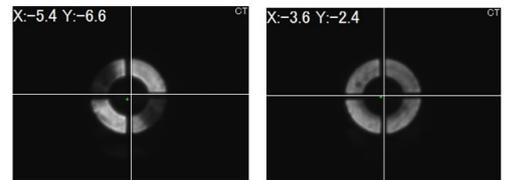
See **“3.1 Equipment Transportation and Installation”** in the instruction manual for the **NIR Micro-spectrophotometer USPM-W-B.**

3.2. Halogen lamp attachment and replacement

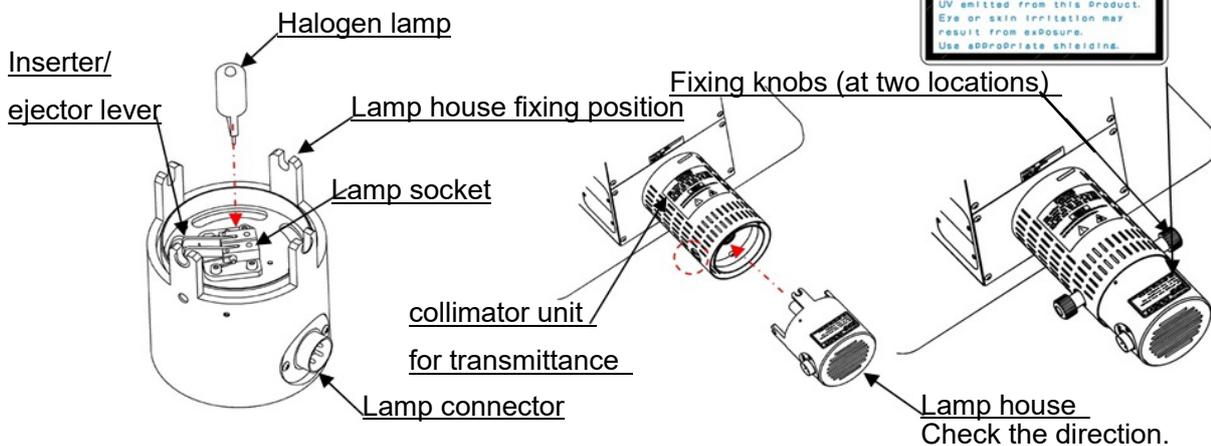
 CAUTION	<p>Set the power switch to OFF for safety, pull out the power cord from the wall outlet, and cool the halogen lamp and lamp socket sufficiently before installing and removing the halogen lamp.</p>
 CAUTION	<p>Do not touch the halogen lamp with your fingers during installation. Wipe away fingerprints or stains if they are present. Use of the halogen lamp in a dirty state shortens its life span.</p>
 CAUTION	<p>The lamp housing requires inspection according to the <u>Appendix: “Lighting System (Lamp Housing) Inspection Check Sheet”</u> in the instruction manual for the <u>NIR micro-spectrophotometer USPM-W-B.</u></p>

Applicable light source lamp: JC12V55W (made by Life Elex)

- (1) Loosen the (two) fixing knobs of the lamp housing installed in the collimator unit for transmittance and remove them. Pull out the lamp housing.
- (2) A lamp socket with a halogen lamp has been installed in the removed lamp housing. Push the (two) detachable levers and install the halogen lamp in the lamp socket. If the lamp does not lean or it is not inserted correctly, the unevenness of a ring image like the right photograph will occur. When unevenness is checked, please check whether insertion of a lamp is corrected.
- (3) Slowly let your fingers release the detachable levers.
- (4) Insert the lamp housing into the former position. Adjust it so that the lamp connector faces the right of the device. Check the encircled part and then check the screw hole position and the lamp housing fixed position. Tighten the (two) fixing knobs of the lamp housing and fix it securely.



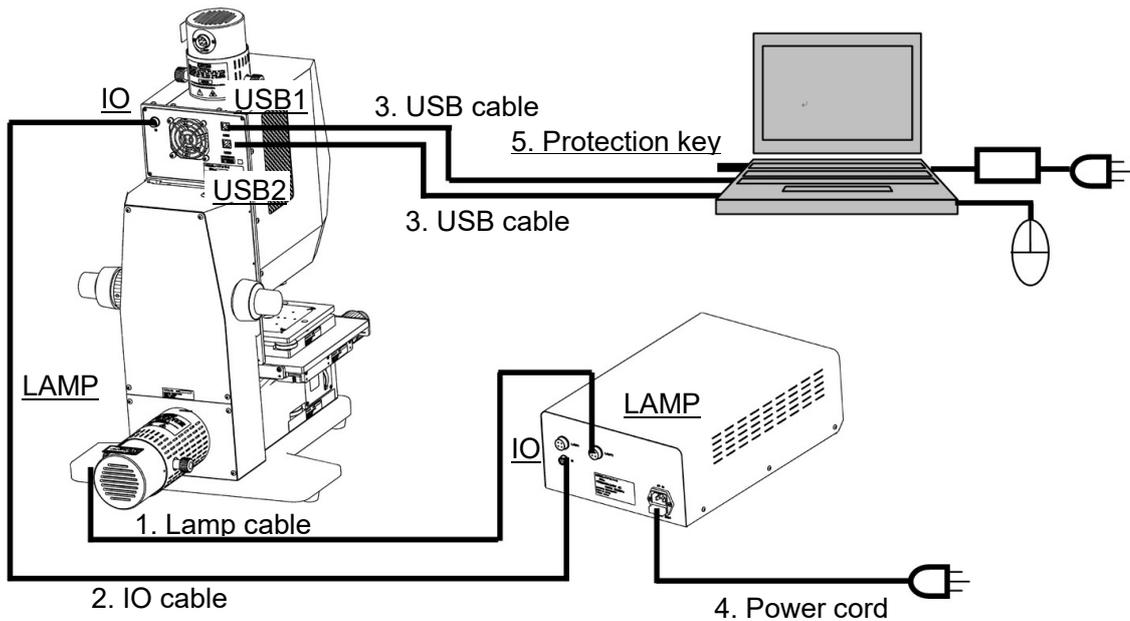
Unevenness of a ring image Correct ring image



3.3. Device connection

 CAUTION	Be careful not to apply excessive force, as cables are susceptible to bending and torsion.
 CAUTION	For cable setting, keep cables away from something sharp.
 CAUTION	Confirm that all power switches are set to OFF and that the power cord has been removed from the wall outlet.
 CAUTION	The power cord may melt and short-circuit if it makes contact with the lamp housing. Keep the power cord sufficiently away from the lamp housing during installation.
 CAUTION	Be sure to use the attached cable. Use of something other than the attached cable may cause a failure such as noise occurrence or malfunction due to external noises. The attached cable cannot be used for other equipment.

Wire as shown in the figure below.



	Name	Connection
1	Lamp cable	Connects the "LAMP" connector of the lamp housing and the "LAMP2" connector of the controller supply unit
2	IO cable	Connects the "IO" connector of the main set and the "IO" connector of the controller supply unit
3	USB cables (2)	Connects the "USB1" and "USB2" connectors of the main set and any USB terminals of a personal computer (Cables and ports are not distinguished.)
4	Power cord	Connects the power plug to a power supply of 100 to 240 V; connect this to a three-hole wall outlet with a grounding point when using a power cord. Our intended electrical safety performance cannot be secured when the wall outlet is not grounded.
5	Protection key	Any USB port on the computer

4. Usage

This chapter describes the outline of the equipment operation according to the general procedure. For details on use, conduct full training from the standpoint of a specialist.

4.1. Measurement flow

- (1) Start the controller supply unit and computer and then start the software.
→ See "**4.2 Start-up.**"
- (2) Select the objective lens.
→ See "**4.3 Revolver settings.**"
- (3) Set the switching of the optical path. (Option: Customers who purchase a 45-degree expansion unit)
→ See "**4.4 Optical path switching settings.**"
- (4) Set the polarization state. (Option: Customers who purchase a polarization unit)
→ See "**4.5 Polarization state settings.**"
- (5) Set a work setting file.
→ See "**4.6 Setting a work setting file.**"
For reference setting, select [FIXED] and enter 100[%].
- (6) Adjust the position of the reference (standard light flux).
→ See "**4.7 Position adjustment of a reference (standard light flux).**"
- (7) Set the sampling time.
→ See "**4.8 Adjusting the sampling time.**"
- (8) Acquire a background value.
→ See "**4.9 Acquiring a background value**"
- (9) Acquire a reference value.
→ See "**4.10 Acquiring a reference value.**"
- (10) Install a measurement sample.
→ See "**4.11 Setting a measurement sample.**"
- (11) Adjust the position of the measurement sample
→ See "**4.12 Adjusting the position of a measurement sample.**"
- (12) Perform measurement.
→ See "**4.13 Spectrometry.**"

-
- (13) Confirm the results.
→ See "**4.14 Checking the results.**"
 - (14) Shut down the software and then shut down the controller supply unit and computer.
→ See "**4.15 Termination.**"

4.2. Start-up



For the handling of the computer, see the computer's instruction manual for correct usage procedure.

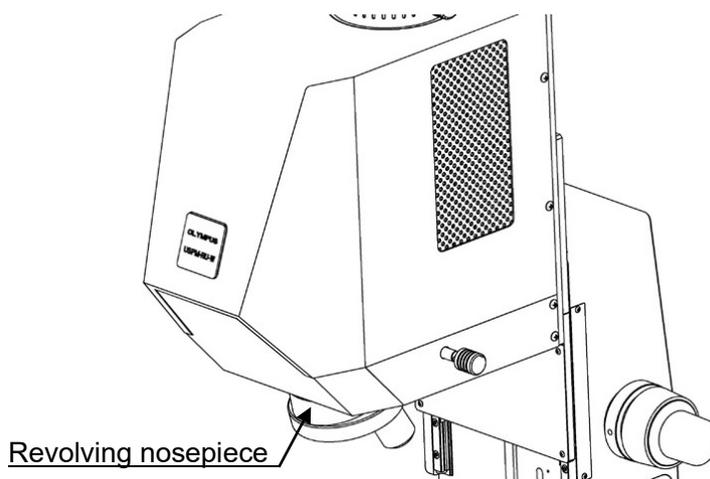


It takes about 15 minutes to set the lamp switch to ON and to stabilize a halogen lamp after it lights. Warm up the halogen lamp as required.

- (1) Set the power switch of the controller supply unit to ON.
- (2) Set the lamp 2 switch of the controller supply unit to ON.
- (3) Start the computer, double-click the shortcut icon  on the desktop, and start the program.

4.3. Revolver settings

- (1) Set a revolver.
A revolver is adjusted to the through position (in which an objective lens is not installed) when measuring a spectral transmission factor using a transmissit unit.

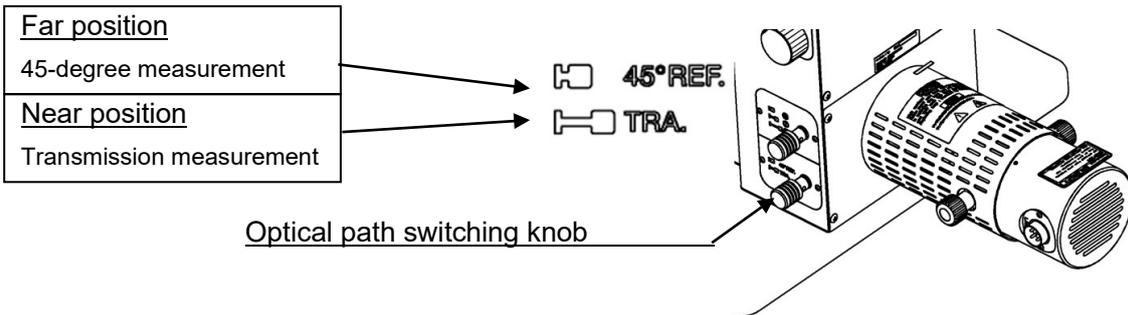


4.4. Optical path switching settings * Option



Gently operate the optical path switching knob used for the optical switching unit. Applying excessive force during operation may cause damage, necessitating replacement.

- (1) For the customer who purchased a Reflectivity Measurement Unit for 45-Degree , set the optical path switching knob.
Set the optical path switching knob to the correct position (TRA) by pulling it out toward you.

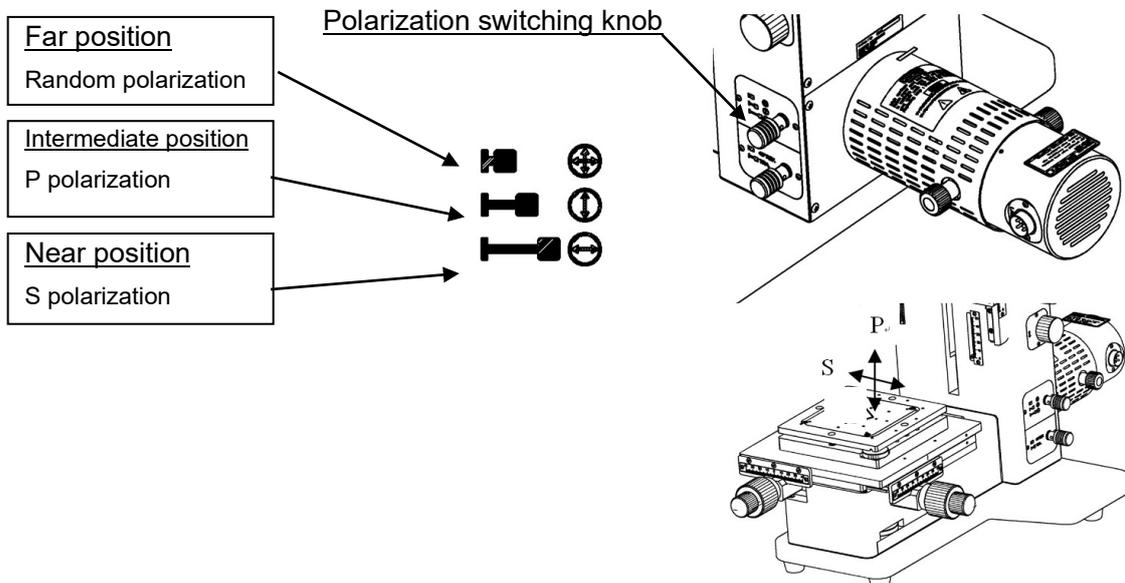


4.5. Polarization state settings * Option



Gently operate the polarization switching knob used for the polarization device unit. Applying excessive force during operation may cause damage, necessitating replacement.

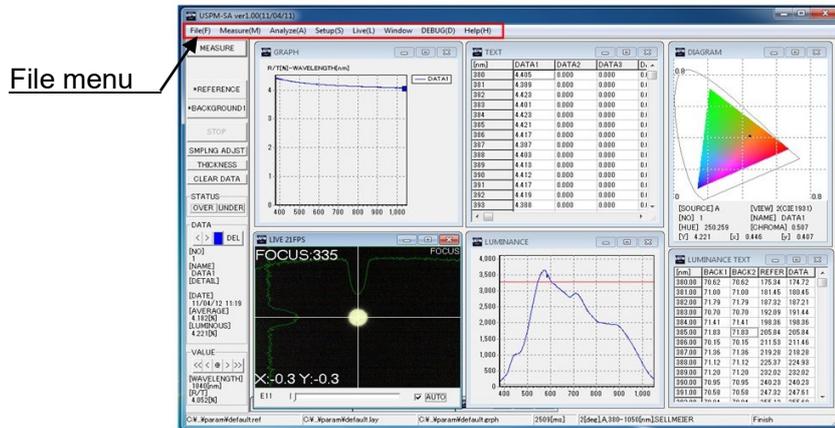
- (1) For the customer who purchased a polarization unit, set the polarization state switching knob.
Set the polarization state switching knob to the polarization direction you want to measure. The polarization direction faces the stage surface.
Refer to the figure below.



4.6. Setting a work setting file

For more details, see **“6.2 Work setting” in the Software Instruction Manual USPM-SA.**

(1) Select [Set] - [Work] from the file menu. A WORK setting window appears.



(2) Set the reference.

REFERENCE

FIXED

FILE

FILENAME

POLARIZATION

R S P

TYPE SELLMEIER

DETAILS DEFAULT BK7

C1	1.1515019	C4	-0.011822519
C2	0.010590413	C5	1.26301359
C3	0.118583612	C6	129.617652

1) Click ∇ and fix FIXED.

2) Enter 100 in FIXED[%].

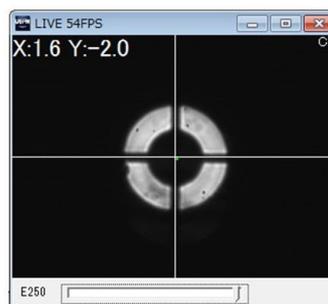
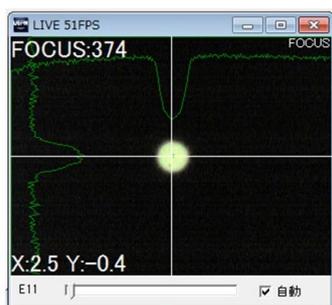
4.7. Position adjustment of a reference (standard light flux)



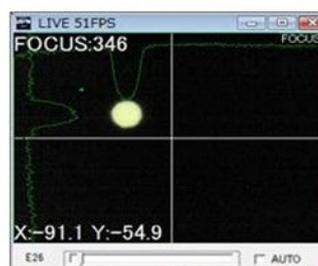
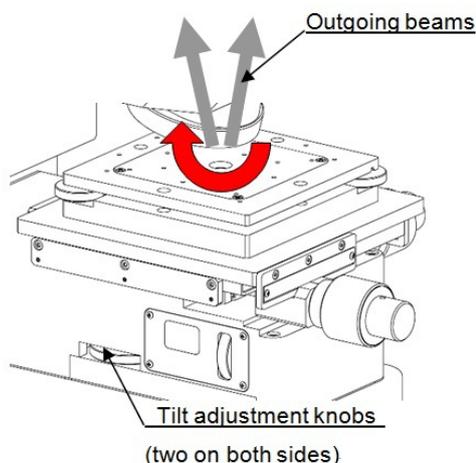
Gently operate the adjustment knobs used for the transmission measurement unit. Applying excessive force during operation may cause damage, necessitating replacement.

[Window switching method]

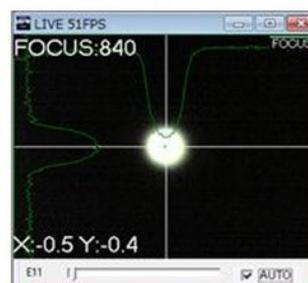
Double-click the black portion of the LIVE window. The FOCUS and CT windows are switched. These windows can also be selected from [Image] from the file menu. (A FOCUS window appears when the software is started.)



- (1) Adjust the shift stage to point 0 of the scale using the shift adjustment knob.
- (2) Click the AUTO check box in the lower-right position of the FOCUS window.
- (3) Adjust the outgoing beam's tilt of reference (standard light flux).
For the tilt adjustment of a reference (standard light flux), observe the FOCUS window of the software and adjust the tilt to the optimum position using the tilt adjustment knobs.
The position where the numeric values (X:*** Y:***) displayed in the lower-left position of the FOCUS window become minimum is the optimum value. It is recommended that you set the values to (X:0±1 Y:0±1).

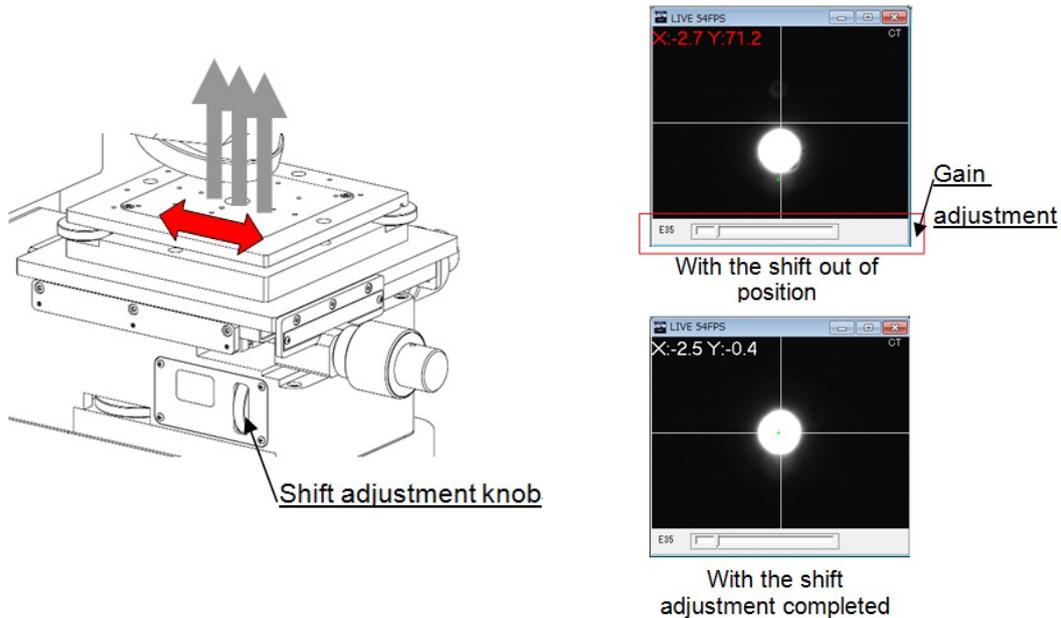


With the tilt out of position



With the tilt adjustment completed

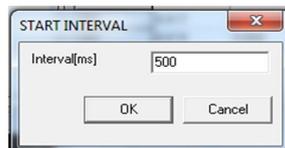
- (4) Adjust the outgoing beam's shift for a reference (standard light flux).
 First, CT windows are switched .move the portion shown in the figure below while clicking it and adjust the gain so that an image is displayed. Adjust the image so that it is displayed in a circle.
 Perform the shift adjustment of one axis while confirming the CT window using the shift adjustment knob. In this adjustment, the CT window is adjusted only in the vertical direction (Y-axis direction). Adjustment in the horizontal direction is designed to mechanically exert no influence on measurement.
 Adjust the numeric value (Y:***) displayed in the upper-left position of the CT window to (Y:0±1).



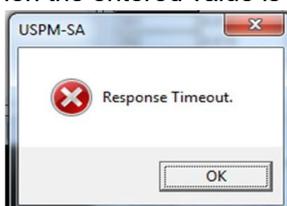
4.8. Adjusting the sampling time

Adjust the sampling time so that the spectral light intensity of the reference (standard light flux) does not exceed the maximum light-receiving amount of the photosensor. Adjust the sampling time in the procedure below.

- (1) Click **Adjust sampling** on the operation panel.
- (2) After a START INTERVAL window appears, enter a proper value and click the OK button. A shutter operates, and measurement is started.



Reference: Depending on the numeric value to be entered, an error may occur. In this case, enter a numeric value again according to the contents of the error message.
 [When the entered value is too low] [When the entered value is too high]



to end the operation. Then, the shutter operates again.

4.9. Acquiring a background value

- (1) Click on the operation panel.
A clicky sound is generated, and then a warning alarm sounds as the process finishes.
As the data is saved, an asterisk (*) appears at the left of in the operation panel.

4.10. Acquiring a reference value

- (1) Click on the operation panel.
The shutter sounds, the reference value is captured. After that, the shutter operates again, and a warning alarm sounds as the process finishes.
As the data is saved, an asterisk (*) appears at the left of in the operation panel.

4.11. Setting a measurement sample

- (1) Install the measurement sample on the upper surface of the tilt stage. The measurement sample is placed at the holed point in the center of the stage.

4.12. Adjusting the position of a measurement sample

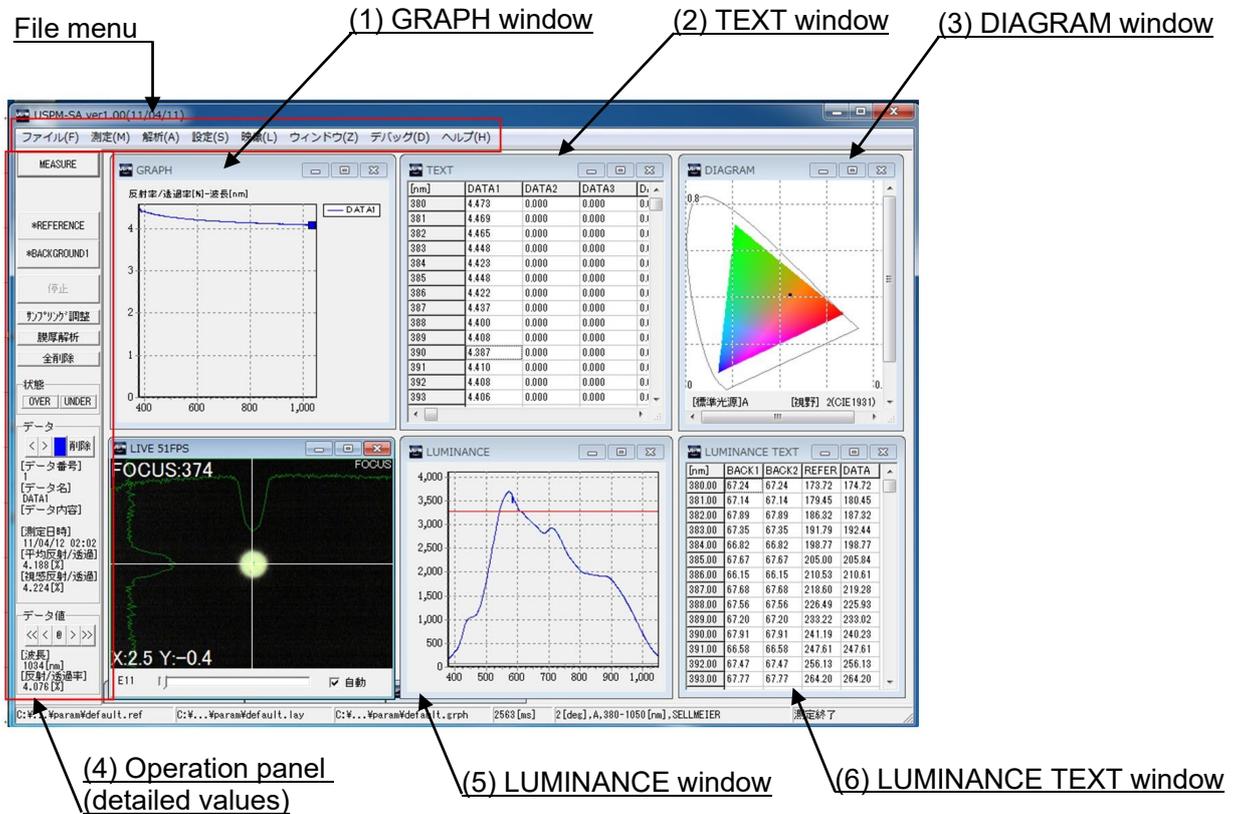
- (1) Adjust the tilt of the measurement sample.
Perform the tilt adjustment of the measurement sample in the same way as in (3) of "4.7 Position adjustment of a reference (standard light flux)."
- (2) Adjust the shift of the measurement sample.
Perform the shift adjustment of the measurement sample in the same way as in (4) of "4.7 Position adjustment of a reference (standard light flux)."

4.13. Spectrometry

- (1) Click on the operation panel.
The shutter sounds, indicating the start of spectroscopy. When alarm sounds and spectroscopy is ended, a shutter sounds again.
The result is displayed in the sub-windows. Up to 20 results can be stored.

4.14. Checking the results

For details on the main window of the software, see **“4. Main Window” in the Software Instruction Manual USPM-SA.**



(1) GRAPH window

The measurement result of the spectral reflection factor is displayed on the GRAPH window using a graph. The vertical axis is the reflection factor, and the horizontal axis is the wavelength.

(2) TEXT window

The numeric values of the measurement result are displayed on the TEXT window.

(3) DIAGRAM window

The measurement result of the chromaticity diagram is displayed on the DIAGRAM window.

XY and Lab chromaticity diagrams can be displayed as a chromaticity diagram. They can be selected by double-clicking the window.

Two chromaticity diagrams can also be switched by using the graph setting.

For details on the graph setting, see **“6.4 Graph setting” in the Software Instruction Manual USPM-SA.**

(4) Operation panel (detailed numeric values)

The detailed numeric values of various measurement results can be confirmed in the data field on the left of the main window. To move the displayed wavelength, use the , , and  buttons in the data field.

To delete the measurement result, click the  button.

(5) LUMINANCE window

The spectroscopic quantity of the lights of background, reference and measurement is indicated in a graph in black (grey), cyan and blue, respectively. The red line indicates the upper limit of the spectroscopic quantity defined in the system configuration window. (The pink line indicates the lower limit of the spectroscopic quantity defined in the system configuration window.)

(6) LUMINANCE TEXT window

Each spectral light intensity of a background, reference, and measurement is displayed on the LUMINANCE TEXT window. The display interval can be set on the GRAPH setting window.

[Saving]

Select [File] - [Save data file] from the file menu.

A save dialog box appears. Assign a name to the file and save it. The saving format can be changed by changing the extension in the save dialog box.

[Printing]

Select [File] - [Print] from the file menu.

A print setting dialog box appears. After setting, click the  button for printing.

4.15. Termination

(1) Select [File] - [Exit] from the file menu and terminate the program.

(2) Set the power switch of the controller supply unit to OFF.

(3) Shut down the computer.

5. Notes on Storing

5.1. Storing

See **“5.1 Storage” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B.**

5.2. Maintenance

See **“5.2 Maintenance” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B.**

5.3. Wavelength offset

The method used to offset the spectral transmission factor is not provided. Our company does not perform offset.

For details on how to offset the wavelength, see **“5.3 Wavelength offset” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B.**

6. If Abnormality Occurs

Make confirmation through the combined use of **“6. If Abnormality Occurs” in the instruction manual for NIR Micro-spectrophotometer USPM-W-B.**

Trouble	Cause and countermeasure
Light is not output.	<ul style="list-style-type: none">(1) Confirm that the lamp has not deteriorated.(2) Confirm that the lamp is installed securely.(3) Confirm that the lamp switch is set to ON.(4) Confirm that the shift stage is adjusted to point 0 on the scale.(5) Confirm that the position of the (optional) optical path switching knob is properly set.(6) Confirm whether the transmission window is dirty. (See <u>“Appendix: Cleaning the transmission window glass.”</u>)

7. Conforming to Laws and Regulations

See **“7. Conforming to Laws and Regulations” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B.**

Appendix

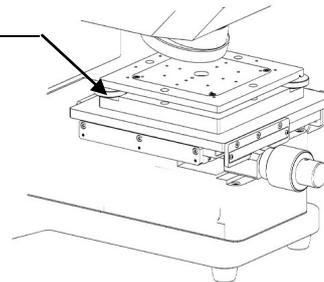
To customers who execute micro-spectrophotometry by placing a sample on the tilt stage
It is recommended to adjust the tilt of the tilt stage vertically to the optical axis when the customer who purchased a transmit unit and 45-degree expansion unit performs micro-spectrophotometry. For the customer who measures a thin plate, especially, be sure to perform this adjustment.

[Tilt adjustment of the tilt stage]

- (1) See **“3.7 Device connection” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B** for installation.
- (2) See **“4.2 Start-up” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B** for system start.
- (3) Set a revolver.
The revolver is adjusted to the through position (in which an objective lens is not installed).
- (4) Install a BK7 reference sample in the tilt stage.
- (5) Adjust the tilt of two axes to the optical axis using the tilt stage adjustment knob.

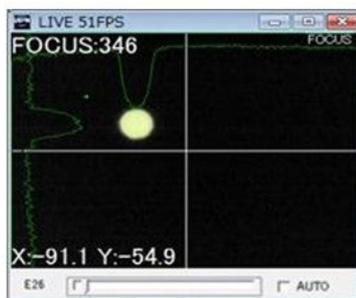
Tilt stage adjuster

Adjust the tilt of the two axes to the optical axis.

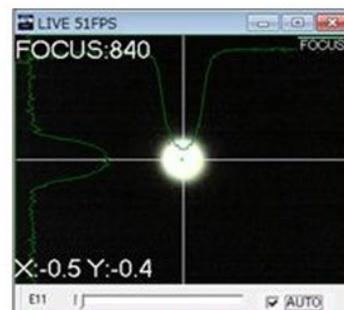


[Tilt adjustment]

Make adjustment using the tilt adjustment knobs so that outgoing beams are parallel to the optical axis while confirming a FOCUS window. Adjust such so that the (X:*** Y:***) value displayed in the lower-left position of the FOCUS window is the minimum. It is recommended that you set the value to (X:0±1 Y:0±1) when performing more accurate measurement.



With the tilt out of position

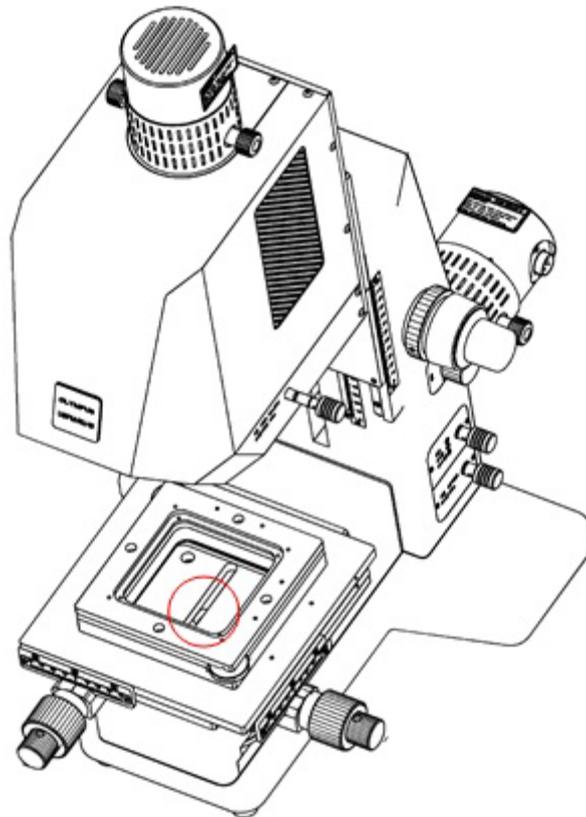


With the tilt adjustment completed

- (6) After the tilt adjustment of the tilt stage is completed, measure according to the items in “4. Usage” in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B.

Cleaning the transmission window glass

- (1) See **Section 3.6 in the instruction manual for the NIR Micro-spectrophotometer USPM-W-B** and remove the work installing plate.
- (2) Adjust the scale of the shift stage to point 0.
- (3) In the figure below, the transmission window glass is viewed in the portion circled in red. Clean it using a blower.



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