

Lambda 365 Fiber Coupling Module and Fiber Optic Probe Installation Instructions

This instruction sheet describes the installation of this accessory which is used with the Lambda 365 Spectrophotometer.

NOTE: *Read these instructions before you install this accessory.*

Contacting PerkinElmer

Supplies, replacement parts, and accessories can be ordered directly from PerkinElmer, using the part numbers.

See our website:

<http://perkinelmer.com>

PerkinElmer's catalog service offers a full selection of high-quality supplies.

To place an order for supplies and many replacement parts, request a free catalog, or ask for information:

If you are located within the U.S., call toll free 1-800-762-4002, 8 a.m. to 8 p.m. EST. Your order will be shipped promptly, usually within 24 hours.

If you are located outside of the U.S., call your local PerkinElmer sales or service office.

Features

- Durable stainless steel design
- Dip Probe for measuring liquid samples without using a cell

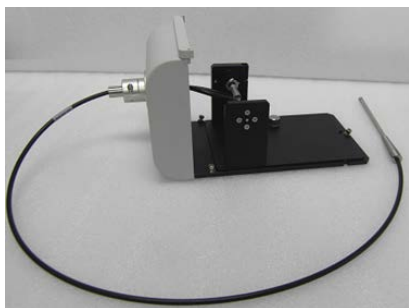


Figure 1 Lambda 365 Fiber Coupling Module [Part No: N4101013] with Fiber Optic Probe [Part No: N4101048]



PerkinElmer, 710 Bridgeport Avenue,
Shelton, CT 06484-4794, U.S.A

Produced in the USA.

Dimensions and Specifications

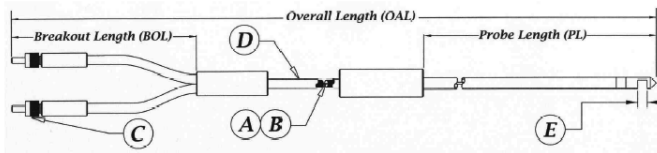


Figure 2 Fiber Optic Probe



Figure 3 Fiber Coupling Module

Physical Characteristic		Specification
Fiber Optic Probe (Part No: N4101048)	A: Fiber Type	Fused Silica
	B: Fiber Size	600 μm
	C: Connector	SMA 905
	D: Probe Diameter	\varnothing 0.19" OD
	E: Path Length	10 mm
	Spectral Range	200 nm ~ 1100 nm
	Overall Length (OAL)	100 ~ 120 cm
	Breakout Length (BOL)	18 ~ 23cm
	Probe Length (PL)	15.2 cm
Fiber Coupling Module (Part No: N4101013)	Dimension (mm)	132(W) x 138(H) x 280(D)
	Weight (Kg)	0.92

Configuration of Fiber Coupling Module



Figure 4 Fiber Coupling Module



- Used to fix a front plate for Fiber Coupling Module
- Spare screws (2ea) are enveloped with the accessory

Figure 5 Phillips round head screw with washer (M4 *12L)



Figure 6 1.5 mm wrench

Installation

1. Prepare the Lambda 365 Spectrophotometer to install this accessory.
2. Prepare the fiber coupling module and fiber optic probe.
3. Remove the two M3x10L cross recessed flat head screws with washer using a Phillips screw driver.



Figure 7 Separate the optical fiber probe clamp

4. Insert connectors of the fiber optic probe through the optical fiber probe clamp.

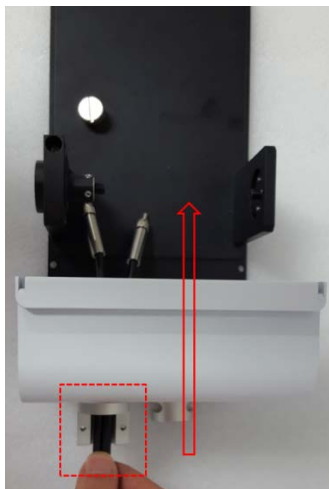


Figure 8 Inserting the fiber optic probe

5. Fix the two M3x10L cross recessed flat head screws.



Figure 9 Fixing two screws

6. Connect the connectors of the fiber optic probe to the Collimator holder and the SMA port.

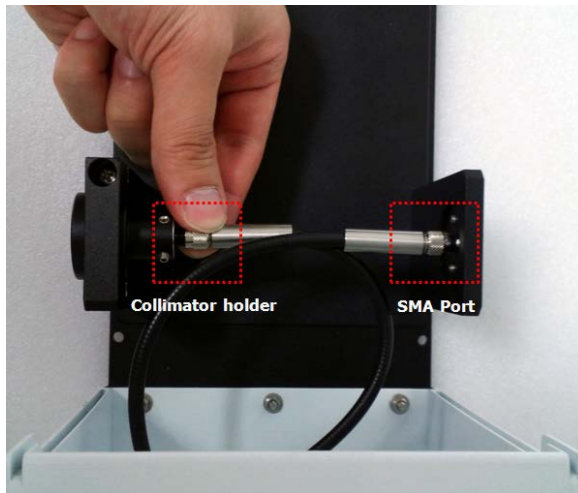


Figure 10 Connecting the fiber optic probe

7. Make sure that the fiber coupling module and fiber optic probe are connected correctly as below.



Figure 11 Fiber coupling module with fiber optic probe

8. Remove the two Phillips round head screws with washer (M4*12L) to disassemble the existing cell holder and base plate.



Figure 12 Location of the Phillips round head screws with washer (M4*12L)

9. Pull out the cell holder and base plate by hand.



Figure 13 Pulling out the cell holder and base plate

10. Insert the Fiber Coupling Module with fiber optic probe into the sample compartment.



Figure 14 Inserting the Fiber coupling module with fiber optic probe

11. Tighten the Fiber Coupling Module in the sample compartment with the screws.



Figure 15 Screw location

12. Dip the fiber optic probe into the liquid sample.
13. Align the optimum position by moving Fiber Optic Probe itself. The alignment procedure will be described in the section of **Alignment of Fiber Optic Probe**.

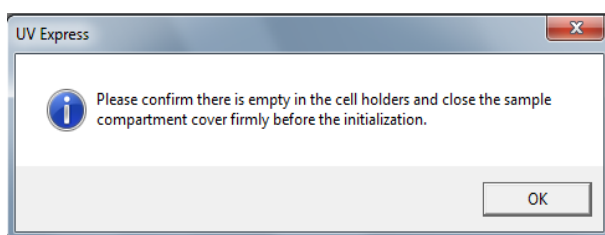
Measurement

System Self Test

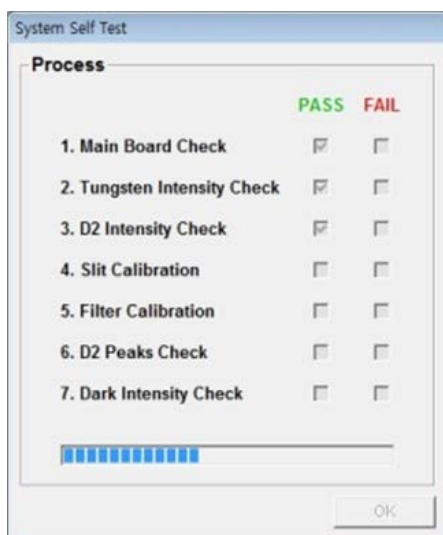
NOTE: The Fiber coupling module with fiber optic probe should be installed after System Self Test is finished.

NOTE: Start the System Self Test after warming up the system for at least 20 minutes.

1. Install a single cell holder and base plate.
2. Double-click on the **UV Express** folder and select experiment mode for starting.
3. The following window will appear. Make sure that the sample compartment is closed firmly and select OK.

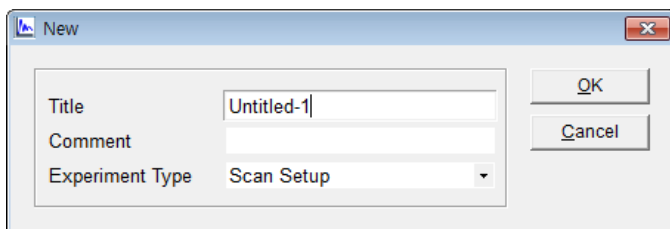


4. Click **OK** after finishing the System Self Test.

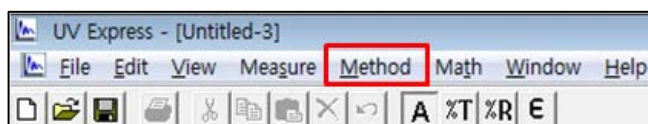


Scan Mode

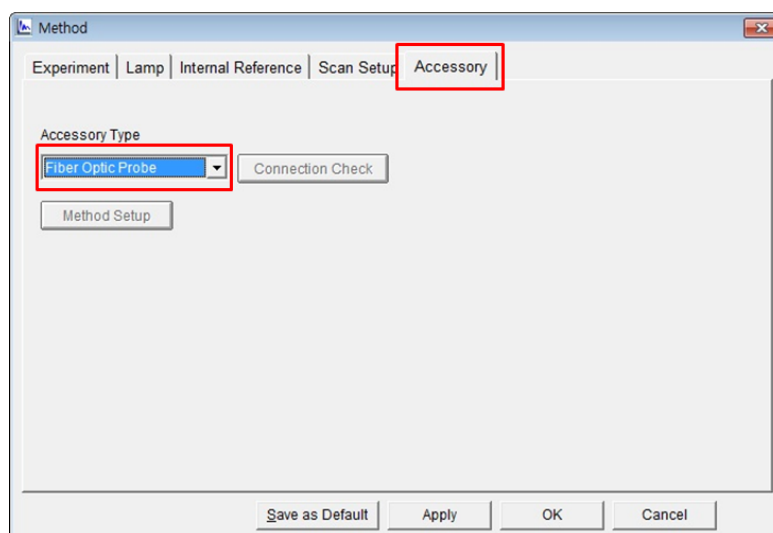
1. Install the fiber coupling module with fiber optic probe, referring to the "Installation" procedures on page 3.
2. Select **New** to open a new window. Select **Experiment Type** and select **OK**.



3. Click **Method** and set up parameters.



4. Setup the experiment parameters as follows:
 - a. **Accessory**: Select the **Fiber Optic Probe**.



- b. **Experiment:** SBW is set 2.0 nm automatically. Setup other experiment parameters.

- c. **Lamp:** **Single Front** is automatically selected. If not, select **Single Front** and setup other experiment parameters.

- d. Setup the Internal Reference, Scan Setup. For more information, see the *Lambda 365 UV Express Software Users Guide*, the section on *Scan Setup*.

5. Select **Apply** and **OK** after setting up the parameters.
6. Dip the probe in the blank solution and select the **Blank** icon.

NOTE: Before measurement, make sure that that bubble does not exist at the mirror side of the probe.

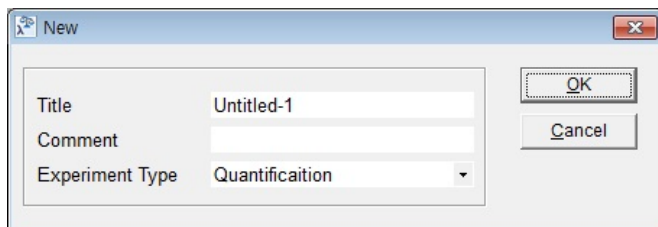
NOTE: When the sample is measured, any light from outside of the bottled should be blocked as it affects the measurement result.

7. Clean the probe and dip it in the sample solution. Select the **Sample** icon.
8. Input the sample name and select **OK**.

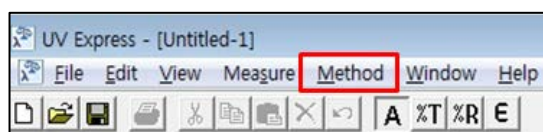
9. The spectrum and result will be displayed. Save or print the results as desired.

Quantification Mode

1. Install the fiber coupling module with fiber optic probe, referring to the "Installation" procedures on page 3.
2. Select **New** to open a new window. Select **Experiment Type** and select **OK**.

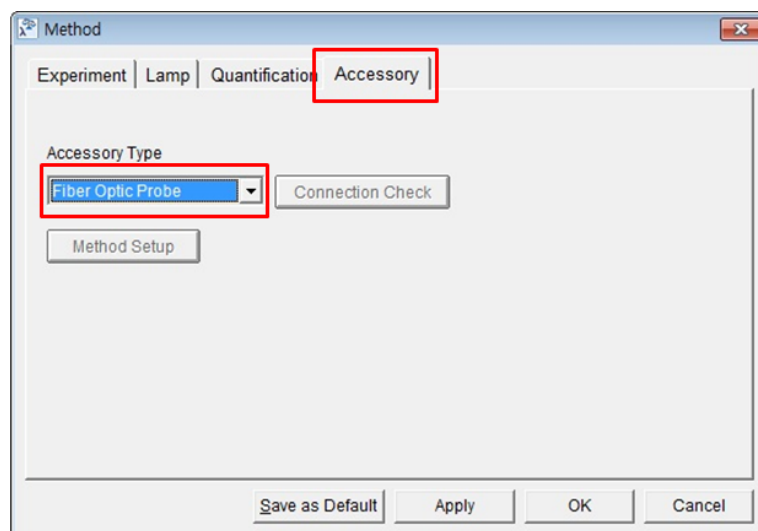


3. Select **Method** and set up the parameters.

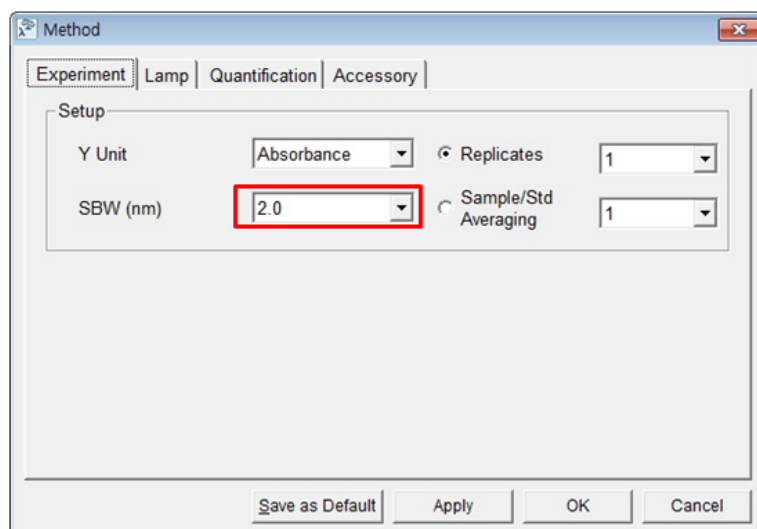


4. Setup the experiment parameters as follows:

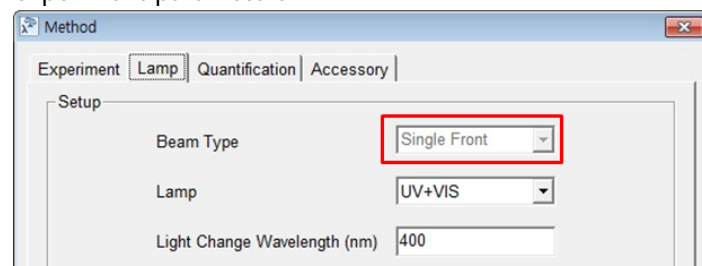
- a. **Accessory**: Select the **Fiber Optic Probe**.



- b. **Experiment:** SBW is set 2.0 nm automatically. Setup other experiment parameters.



- c. **Lamp:** **Single Front** is automatically selected. If not, select **Single Front** and setup other experiment parameters.



- d. Setup the Quantification parameters. For more information, see the *Lambda 365 UV Express Software Users Guide*, the section on *Quantification*.

5. Select **Apply** and **OK** after set-up of parameters.

6. Dip the probe in the blank solution and select the **Blank** icon. Absorbance of selected wavelength is changed about 0 Abs.

NOTE: Before measurement, make sure that that bubble does not exist at the mirror side of the probe.

NOTE: When sample is measured, any light from outside of the bottled should be blocked as it affects the measurement result.

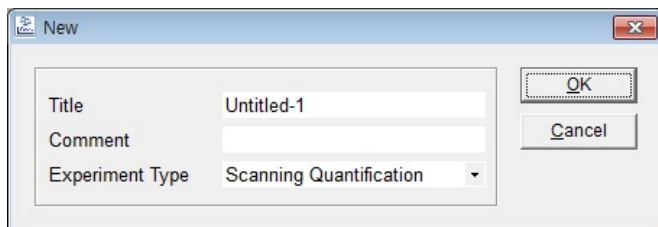
7. Clean the probe and Dip the probe in the Standard solution. Select the **Standard** icon. Measure standard solutions in order and the calibration curve will be created.
8. Clean the probe and dip the probe in the sample solution. Select the **Sample** icon.
9. Input sample name and select **OK**.



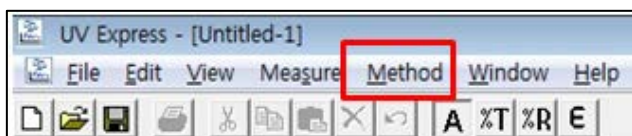
10. The spectrum and result will be displayed. Save or print results as desired.

Scanning Quantification Mode

1. Install the fiber coupling module with fiber optic probe, referring to the "Installation" procedures on page 3.
2. Select **New** to open a new window. Select **Experiment Type** and select **OK**.

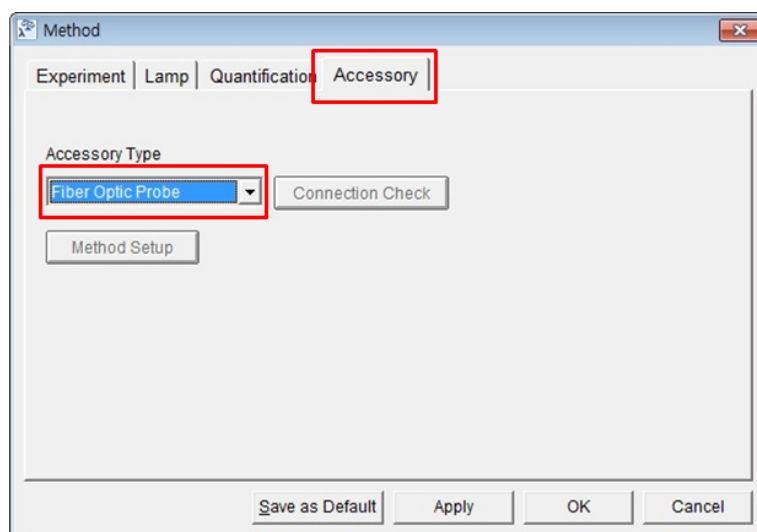


3. Select **Method** and set up the parameters.

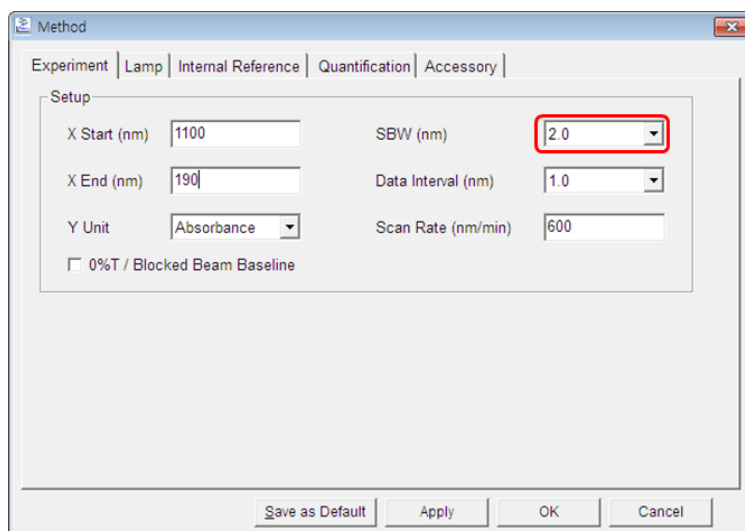


4. Setup the experiment parameters as follows:

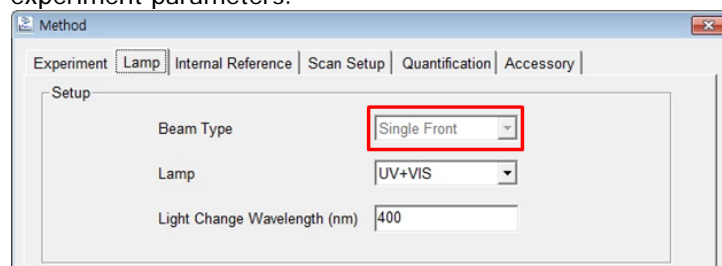
- a. **Accessory:** Select the **Fiber Optic Probe**.



- b. **Experiment:** SBW is set 2.0 nm automatically. Setup other experiment parameters.



- c. **Lamp:** **Single Front** is automatically selected. If not, select **Single Front** and setup other experiment parameters.



- d. Setup the Quantification parameters. For more information see the *Lambda 365 UV Express Software Users Guide*, the section on *Scanning Quantification*.

5. Select **Apply** and **OK** after set-up of parameters.

6. Dip the probe in the blank solution and select the **Blank** icon. Absorbance of selected wavelength is changed about 0 Abs.

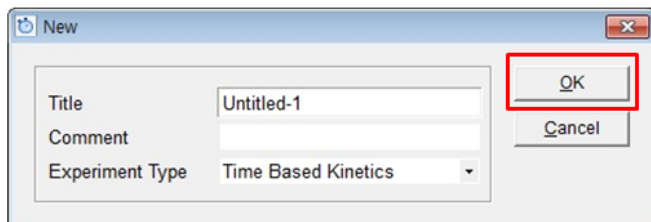
NOTE: Before measurement, make sure that that bubble does not exist at the mirror side of the probe.

NOTE: When sample is measured, any light from outside of the bottled should be blocked as it affects the measurement result.

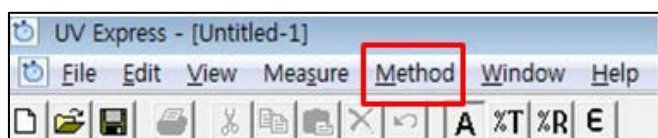
7. Clean the probe and Dip the probe in the Standard solution. Select the **Standard** icon. Measure standard solutions in order and the calibration curve will be created.
8. Clean the probe and dip the probe in the sample solution. Select the **Sample** icon.
9. Input sample name and select **OK**.
10. The spectrum and result will be displayed. Save or print results as desired.

Kinetics Mode

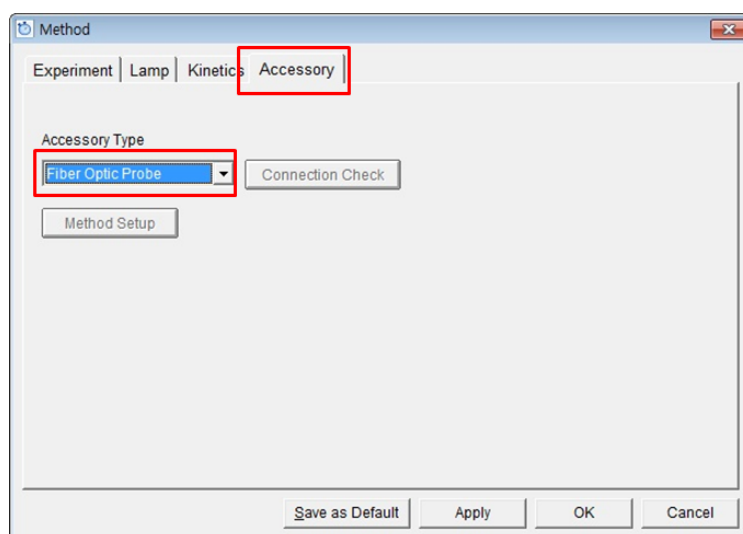
1. Install the fiber coupling module with fiber optic probe, referring to the "Installation" procedures on page 3.
2. Select **New** to open a new window. Select **Experiment Type** and select **OK**.



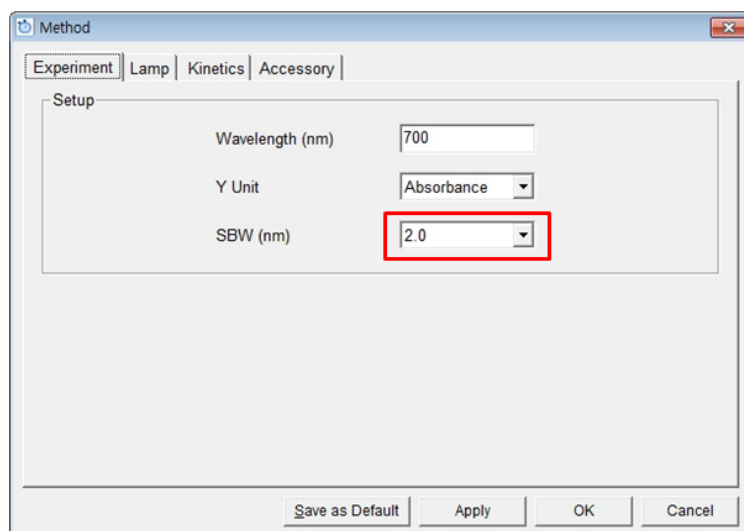
3. Select **Method** and set up parameters.



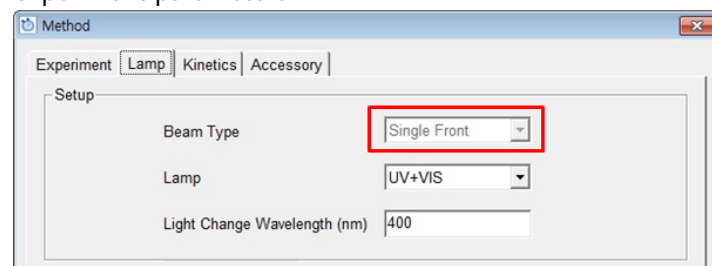
4. Setup the experiment parameters as follows:
 - a. **Accessory**: Select the **Fiber Optic Probe**.



- b. **Experiment:** SBW is set 2.0 nm automatically. Setup other experiment parameters.



- c. **Lamp:** **Single Front** is automatically selected. If not, select **Single Front** and setup other experiment parameters.



- d. Setup the Kinetics parameters. For more information see the Lambda 365 UV Express Software Users Guide, the section *Kinetics Mode*.
5. Select **Apply** and **OK** after set-up of parameters.
6. Dip the probe in the blank solution and select the **Blank** icon. Absorbance of selected wavelength is changed about 0 Abs.

NOTE: Before measurement, make sure that that bubble does not exist at the mirror side of the probe.

NOTE: When sample is measured, any light from outside of the bottled should be blocked as it affects the measurement result.

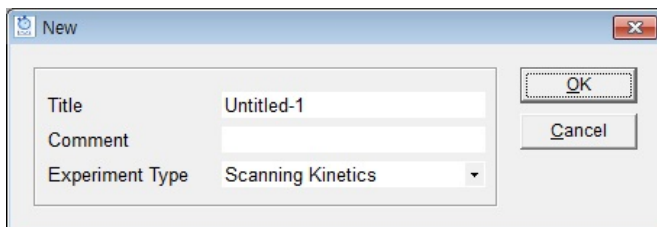
7. Clean the probe and dip the probe in the sample solution. Select the **Sample** icon.
8. Input sample name and select **OK**.



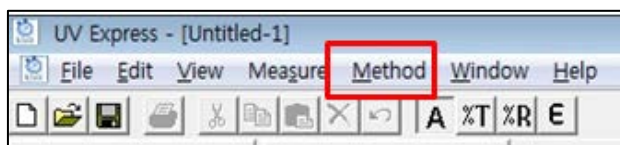
9. The spectrum and result will be displayed. Save or print results as desired.

Scanning Kinetics Mode

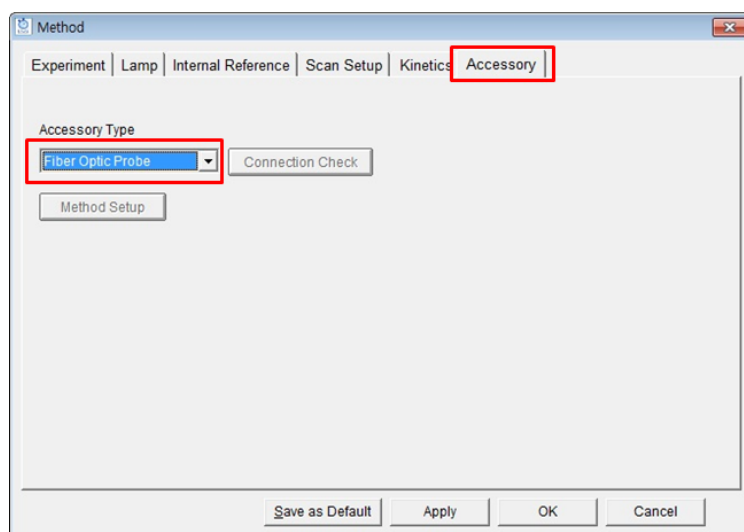
1. Install the fiber coupling module with fiber optic probe, referring to the "Installation" procedures on page 3.
2. Select **New** to open a new window. Select **Experiment Type** and select **OK**.



3. Select **Method** and set up parameters.



4. Setup the experiment parameters as follows:
 - a. **Accessory:** Select the **Fiber Optic Probe**.



- b. **Experiment:** SBW is set 2.0 nm automatically. Setup other experiment parameters.

- c. **Lamp:** **Single Front** is automatically selected. If not, select **Single Front** and setup other experiment parameters.

- d. Setup the Kinetics parameters. For more information see the *Lambda 365 UV Express Software Users Guide*, the section *Scanning Kinetics Mode*.
5. Select **Apply** and **OK** after set-up of parameters.
6. Dip the probe in the blank solution and select the **Blank** icon. Absorbance of selected wavelength is changed about 0 Abs.

NOTE: Before measurement, make sure that that bubble does not exist at the mirror side of the probe.

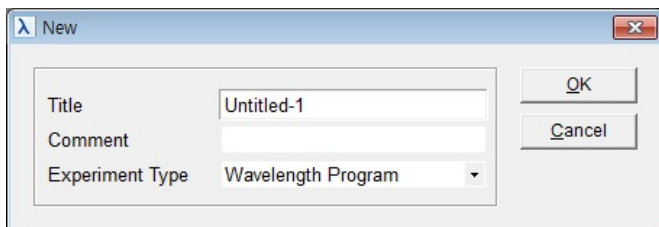
NOTE: When sample is measured, any light from outside of the bottled should be blocked as it affects the measurement result.

7. Clean the probe and dip it in the sample solution. Select the **Sample** icon.
8. Input sample name and select **OK**.

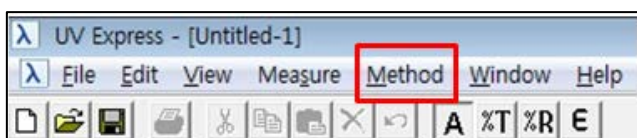
9. The spectrum and result will be displayed. Save or print results as desired.

Wavelength Program Mode

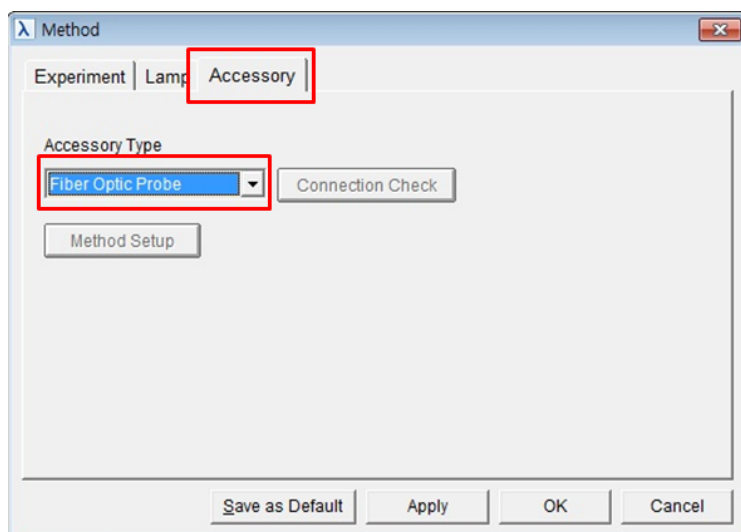
1. Install the fiber coupling module with fiber optic probe, referring to the "Installation" procedures on page 3.
2. Select **New** to open a new window. Select **Experiment Type** and select **OK**.



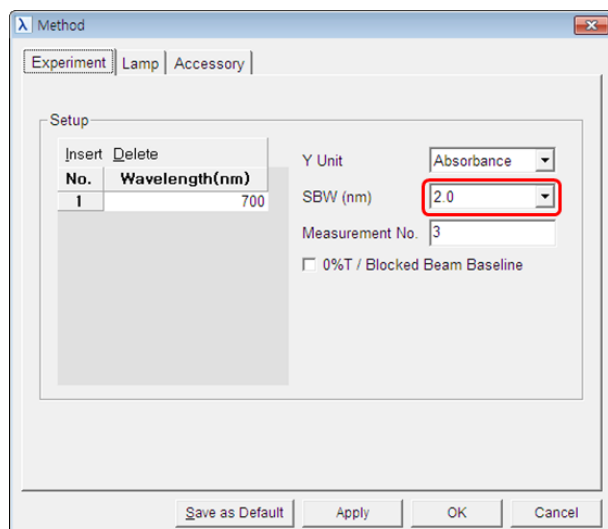
3. Select **Method** and set up parameters.



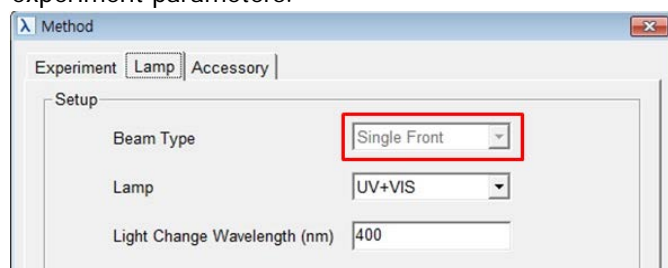
4. Setup the experiment parameters as follows:
 - a. **Accessory**: Select the **Fiber Optic Probe**.



- b. **Experiment:** SBW is set 2.0 nm automatically. Setup other experiment parameters.



- c. **Lamp:** **Single Front** is automatically selected. If not, select **Single Front** and setup other experiment parameters.



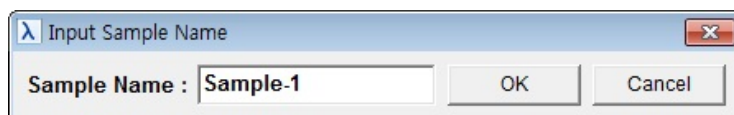
- d. Setup the parameters. See the *Lambda 365 UV Express Software Users Guide*, the section *Wavelength Program Mode*.

5. Select **Apply** and **OK** after setting up the parameters.
6. Dip the probe in the blank solution and select the **Blank** icon. Absorbance of selected wavelength is changed about 0 Abs.

NOTE: Before measurement, make sure that that bubble does not exist at the mirror side of the probe.

NOTE: When sample is measured, any light from outside of the bottled should be blocked as it affects the measurement result.

7. Clean the probe and dip the probe in the sample solution. Select the **Sample** icon.
8. Input sample name and select **OK**.

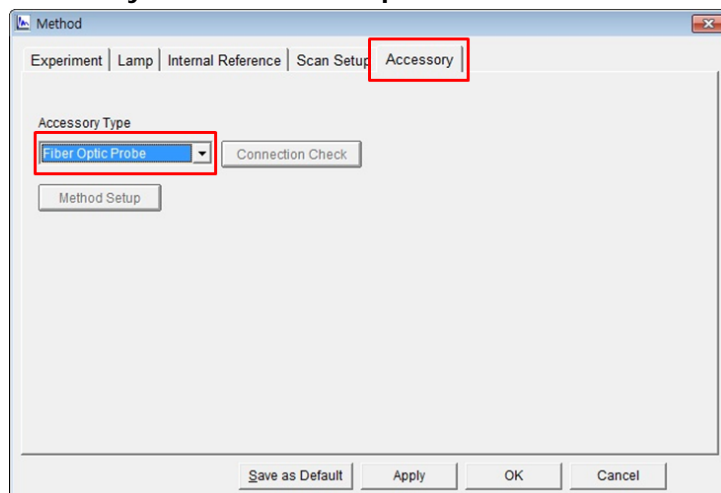


9. The spectrum and result will be displayed. Save or print results as desired.

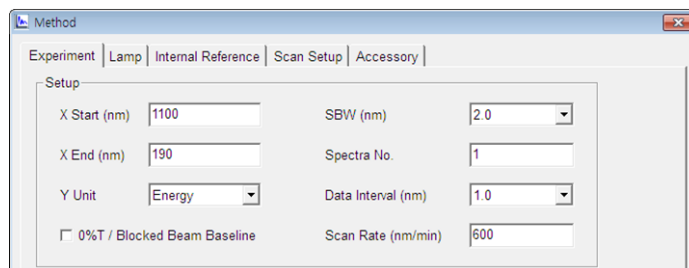
Alignment of Fiber Optic Probe

NOTE: When the fiber optic probe is assembled to the fiber coupling module for the first time, or if the alignment is inaccurate, i.e., the intensity is too low or saturated; you need to perform the intensity alignment as described in the following procedures.

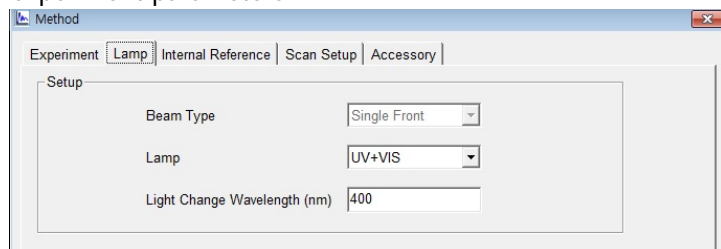
1. Execute the Scan mode of UV Express software.
2. Setup the experiment parameters as follows:
 - a. **Accessory:** Select the **Fiber Optic Probe**.



- b. **Experiment:** SBW is set 2.0 nm automatically. Setup other experiment parameters as follows.



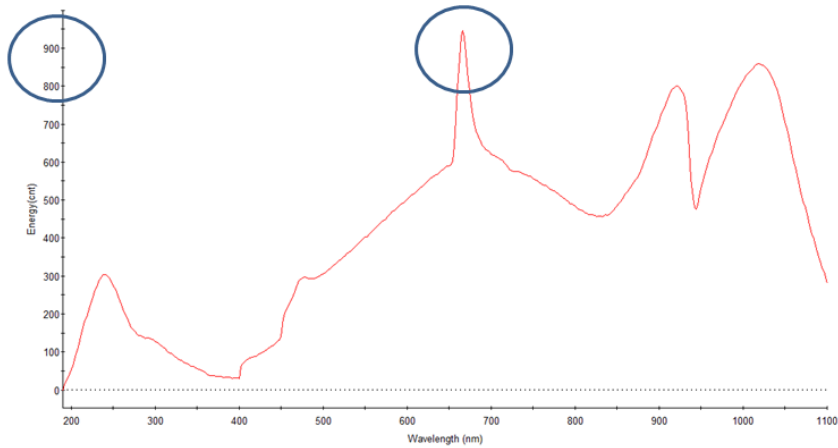
- c. **Lamp:** **Single Front** is automatically selected. If not, select **Single Front** and setup other experiment parameters.



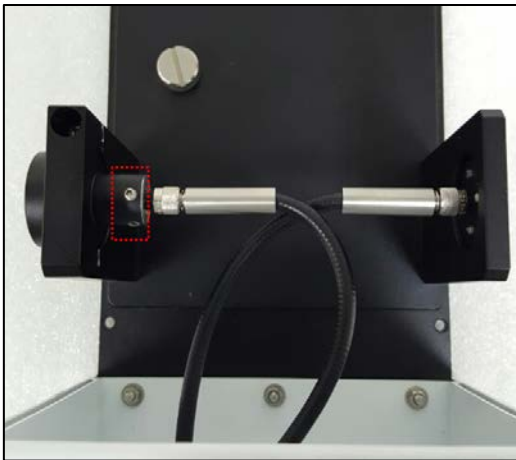
3. Select **Apply** and **OK** after setting up the parameters.
4. Dip the probe in the blank solution and select the **Blank** icon.

5. If the baseline measurement has abnormal results, the Fiber Optic Probe has to be aligned.

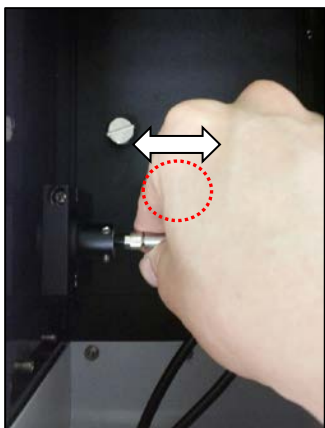
Ex) Intensity is too low.



6. Loosen the three M3 setscrews on the collimator holder using a 1.5 mm wrench.



7. Move slightly back and forth the fiber optic probe connector to the light source side for the alignment, and then tighten the screw on the collimator holder.



8. After finishing the alignment, measure baseline again to check suitability. If it is fine, measure the sample. (Maximum intensity should be over 2000 cnt.) If not, repeat the alignment procedure 1 to 7 above.

