Lambda 265/365/465 Auto Sipper Installation Instructions

This instruction sheet describes the installation of this accessory which is used with the Lambda 265, 365 or 465 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 1-800-762-4000, 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

- · Easy to install
- · Easy to use
- · Flow of the sample is controllable



Figure 1 Auto Sipper with Software Control for Lambda 265 [P/N : N4101050] and Lambda 365/465 [P/N : N4101012]



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

Produced in the USA.

Dimensions and Specifications

Physical Characteristic	Specifications
Speed (RPM)	0.1 to 100
Flow rate	0.0002 - 35 ml/min/channel (tube dependent)
Motor type	Stepper motors
Channels	2
Pump rollers	8
Power	100 – 240 V AC, 50/60 Hz, 30W
Temperature operating (°C)	-5 to 40 °C
Humidity (%)	Up to 80%
Dimensions (mm)	170(H) X 125(W) X 193(D)
Weight (Kg)	2.7

Table of correlation between tube i.d. and ml per revolution

Tuboid (mm)	Flow Rate* (mL/min per channel)
Tube i.d. (mm)	0.1 ~ 100 RPM
0.13	0.0002 to 0.11
0.51	0.0017 to 1.7
0.57	0.0021 to 2.1
0.64	0.0026 to 2.6
0.95	0.0056 to 5.6
1.02	0.0063 to 6.3
1.42	0.011 to 11
1.75	0.016 to 16
1.85	0.017 to 17
2.54	0.027 to 27
2.79	0.031 to 31
3.17	0.035 to 35

Description

Configuration of the Auto Sipper with Software Control for Lambda 265/365/465

• Peristaltic Pump



Figure 2 Peristaltic Pump for Lambda 265/365/465

• Lambda 265/465

Tube connection components

<i>Conical Adapter (2ea)</i>	Conical Adapter	<i>Outlet tube (1ea)</i>	
<i>Peristaltic pump tube (1ea)</i>		Inlet tube (1ea)	.*
Tube 1.5 M (1ea)		Flow cell (1ea) Beam height: L265(8.5 mm) /465(15 mm)	

- Flow cell for L265 P/N: N4101051

- Flow cell for L465 P/N: N4101052

• Lambda 365

Tube	connection	components
1000	0011110011011	0011100110

<i>Conical Adapter (2ea)</i>	Conical Adapter	<i>Outlet tube (1ea)</i>	
<i>Peristaltic pump tube (1ea)</i>		Inlet tube (1ea)	.*
Tube 1.5 M (1ea)		<i>Flow cell (1ea) Beam height: L365(15 mm)</i>	6° ↓

- Flow cell for L365 P/N: N4101052

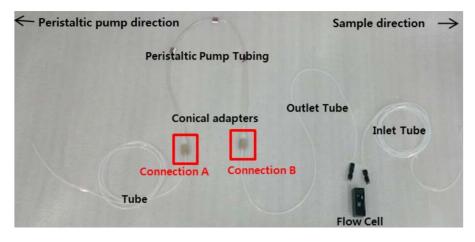
Front plate for Auto Sipper accessory [P/N: N4101026]

<i>Connection Tube Assembly (2ea)</i>		Flangeless Fittings (2ea)	
Phillips round head screw with washer (M4 *12L) (2ea)	Used to fix a front plate for Auto Sipper Accessory Lambda 365	Front plate for Auto Sipper Accessory (1ea)	

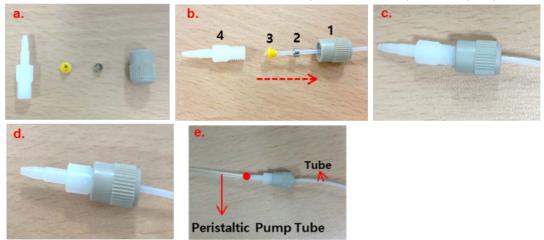
NOTE: *Front plate for auto sipper accessory must be purchased separately.*

Installation for Lambda 265 and 465

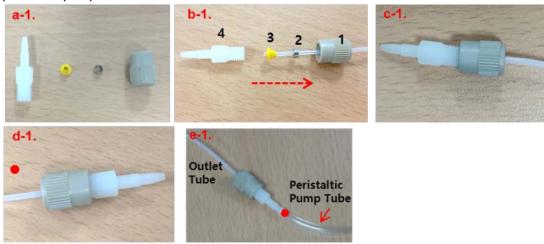
1. Prepare the tube connection components and connect each component one by one.



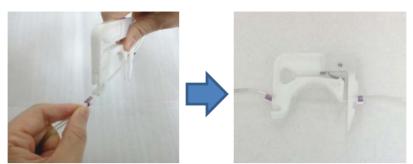
Connection A: Connect the tube to the conical adapter, and to the peristaltic pump tube.



Connection B: Connect the outlet tube of the flow cell to the conical adapter, and to the peristaltic pump tube.



2. Insert the peristaltic pump tube into the cassette by placing the fixing collars of the peristaltic pump tube in the holes on each side of the cassette.



3. Press the cassette down to lock the right side snap lever on the locking bar.



4. Connect the inlet tube to the port of the flow cell with the arrow mark and the outlet tube is connected to the other port of the flow cell.



5. Put the flow cell into the cell holder.



6. Connect the peristaltic pump controller to the PC via the RS-232 cable (or USB to RS-232 cable) or USB cable.

7. Connect the power cable to the peristaltic pump controller.



8. Make the system configuration as shown in the picture below.



Lambda 465 System Configuration

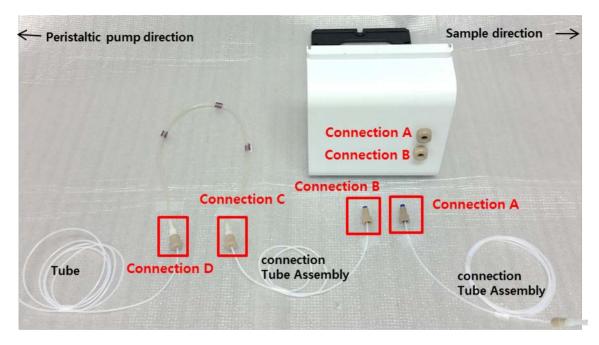
Lambda 265 System Configuration



9. Turn on the power of the Lambda 265/465 and peristaltic pump controller.

Installation for Lambda 365

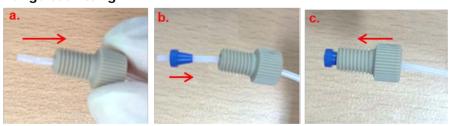
1. Prepare the tube connection components and the front plate for Auto Sipper accessory and connect each component one by one.



Connection A and B: Tighten the Flangeless fittings of the all two Connection Tube Assembly on the front plate for Auto Sipper accessory.

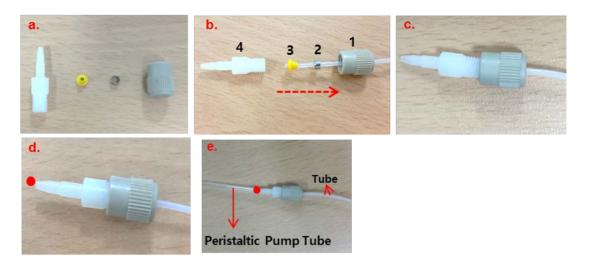
Connection C: Connect the conical adapter of the Connection Tube Assembly to the peristaltic pump tube.

NOTE: Assemble the Flangeless fitting for Connection A and Connection B following the procedures in the picture below.



Connection D: Assemble the conical adapter to the tube, and connect to the peristaltic pump tube. Procedure for assembling conical adapter.

Flangeless fitting



2. Insert the peristaltic pump tube into the cassette by placing the fixing collars of the peristaltic pump tube in the holes on each side of the cassette.

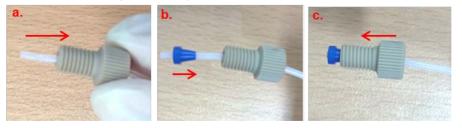


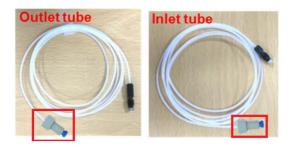


3. Press the cassette down to lock the right side snap lever on the locking bar.

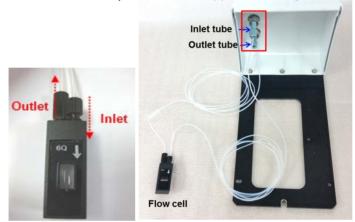


4. Connect to the flangeless fittings to the inlet and outlet tubes for the flow cell.





5. Connect one connector of the inlet tube to the port of the flow cell with the arrow mark and the other connector of the inlet tube to the upper port inside of the front plate for Auto Sipper Accessory, and connect the outlet tube to the outlet port of the flow cell and to the lower port inside of the front plate for Auto Sipper accessory.



6. Remove the two Phillips round head screws with washer (M4*12L) to disassemble the existing cell holder and base plate and insert the front plate for Auto Sipper accessory in the sample compartment.



7. Tighten the front plate for Auto sipper accessory in the sample compartment with the screws and insert the single cell holder on the front plate and tighten the knob.



8. Put the empty flow cell into the cell holder.



- 9. Connect the peristaltic pump controller with the PC via RS-232 cable (or USB to RS-232 cable) or USB cable.
- 10. Connect the power cord to the peristaltic pump controller.



11. Make the system configuration as shown in the picture below.



12. Turn on the power of the Lambda 365 and peristaltic pump controller.

Installing the USB Driver

When using the USB cable you should download USB driver on the IDEX website.

1. Connect to the website: <u>http://www.ismatec.com/int_e/downloads/software/download.htm</u> and download the proper version of the driver.



	ISMATEC > Downloads	Home Contact Feedback
Pumps	Download Pump Control Software for the Reglo ICC	
Tubing	Pump Control Software for 32-bit Systems	
Accessories	Pump Control Software for 64-bit Systems Reglo ICC PC Software Firmware Update V16	
Downloads	Download LabVIEW Drivers	l
Operating manuals		
Software Documents	Peristaltic Pumps: MCP Process	
Information	MCP Standard	
About ISMATEC	REGLO Digital	
Technology Tradeshows	IPC / IPC-N	
What's New	Gear Pumps:	
	MCP-Z Process	
	REGLO-Z Digital	
ISMATEC [°]	, and the second s	
	Piston Pumps:	
Ismatec is part of the product line of Cole-Parmer.	MCP-CPF Process	
	Download ProgEdit Software	
	ProgEdit for MCP, MCP-Z, and MCP-CPF Processes	
	Download Ismatec RS-232 Terminal Emulation Software	
	IsmaTerm	
	Cole-Parmer GmbH, Futtererstr. 16, 97877 Wertheim, Germany Tel. +49 (0)9377 92030 - Fax +49 (0)9377 1388 www.ismatec.com, contact@ismatec.com, inquiry form	-

2. Install the driver by following the instructions.

Installing the USB to RS-232 Driver of Lambda 465

When using the RS-232 cable, the COM Port is set automatically. If it is not automatically set, install the COM port drive properly according to the following procedure.

- **NOTE:** In case of Lambda 265/365, as the USB to RS-232 Driver has already been installed when installing the software, user does not need to install it again.
 - 1. Turn on the computer and the instrument.
 - 2. Connect the USB to RS-232 Cable between the computer and the instrument.
 - 3. Select C>UV Lab> USB Drivers> Lambda 465> USB2 folder.

4. Double click **USBCom-CDM_20828**.



5. Click Extract.

FTDI CDM drivers	× •
PIDI CDM drivers	FTDI CDM drivers Click 'Extract' to unpack version 2.08.28 of FTDI's Windows driver package and launch the installer.
	www.ftdichip.com
	< Back Extract Cancel

6. Click Next.



7. The following dialog box will appear. After installation is completed successfully. Click **Finish**.

Device Driver Installation Wizard			
	Completing the De Installation Wizard		
	The drivers were successfully in	stalled on this computer.	
	Driver Name	Status	
	FTDI CDM Driver Packa FTDI CDM Driver Packa	-	
< Back Finish Cancel			

8. Set parameters for the USB serial Port after finishing driver setup, referring to the following section.

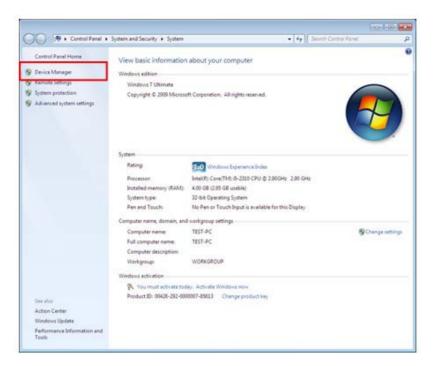
Setting USB to RS-232 Cable

When using the RS-232 cable, the COM Port is set automatically, and then you should set USB serial port

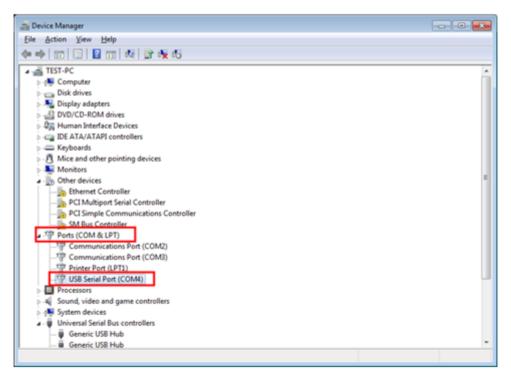
1. Select **My Computer** \rightarrow **Properties**.



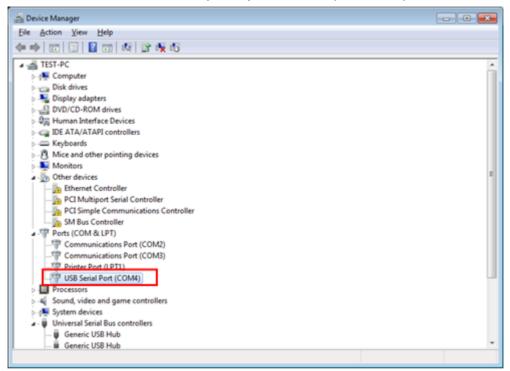
2. Select Device Manager.



 Select the Ports (COM & LPT) to expand the listing. These are the devices currently connected to the COM ports. The USB Serial Port (COMx) is visible when the driver installation is completed successfully.



4. Double click on USB Serial Port (COMx) of the Ports (COM & LPT) section.



5. Select on the **Port Settings** tab and click on the **Advanced... button**.

USB Serial Port (COM4) Properties
Genera Port Settings Driver Details
Bts per second: 9600 ▼ Data bts: 8 ▼ Parity: None ▼ Stop bts: 1 ▼
Bow control: None
Advanced Restore Defaults
OK Cancel

6. Change the parameter values as shown below.

Advanced Settings for COM4		? 💌
COM <u>P</u> ort Number: COM4 USB Transfer Sizes Select lower settings to correct performance problems at lo Select higher settings for faster performance. Receive (Bytes): 4096 • Transmit (Bytes): 4096 •	• baud rates. 1024 1024	OK Cancel Qefaults
BM Options	Miscellaneous Options	
Select lower settings to correct response problems.	5 herator	V
Latency Timer (msec):	2 senar printer	
	Cancel If Power Off	
Timeouts	500 urprise Removal	
Minimum Read Timeout (msec):	Set RTS On Close	
Minimum Write Timeout (msec):	500 Jem Ctrl At Startup	

7. Select **OK** after checking the changed parameter values.

Advanced Settings for COM4			? 💌
COM Port Number: COM4 USB Transfer Sizes Select lower settings to correct perfor Select higher settings for faster perf Receive (Bytes): Transmit (Bytes):		aud rates.	OK Cancel Qefaults
BM Options Select lower settings to correct respo Latency Timer (msec): Timeouts Minimum Read Timeout (msec): Minimum Write Timeout (msec):	nse problems. 5 • 500 • 500 •	Miscellaneous Options Serial Enumerator Serial Printer Cancel If Power Off Event On Surprise Removal Set RTS On Close Disable Modem Ctrl At Startup	

- 8. Execute the software.
- 9. If the instrument fails to communicate with the PC, change the COM Port Number as following procedure.
- 10. Open Advanced Setting for COMx window following steps 1 to 7.

11. Select on the COM Port number list to expand it and change the COM port number to another one which is not in use from COM 1 to COM 10.

COM Port Number:	COM4	-	ОК
USB Transfer Sizes	COM1 COM2		Cancel
	COMP (a una)		care
Select lower settings to co	rre COM4	🗉 d rates.	Defaults
Select higher settings for	Fac COM5 (in use)		Derduna
Select righter seturigs for			
Deceive (Duter)	COM7		
Receive (Bytes):	COM8 COM9		
	COM10		
Transmit (Bytes):	COM10 COM11		
	COM12		
	COM13		
BM Options	COM14	Miscellaneous Options	
Select lower settings to co			2
seccrone seconds to co	COM16	Serial Enumerator	
	COM17	and a second second	
Latency Timer (msec):	COM18	Serial Printer	
coverey miles (mace).	COM19		
	COM20	Cancel If Power Off	
Timeouts	COM21	Event On Surprise Removal	
	COM22	Event on surprise Renoval	
Minimum Read Timeout (m	COM23	Set RTS On Close	1
	COM25	Contra Children	
Minimum Write Timeout (n		Disable Modern Ctrl At Startup	1
rammum write imeout (n	COM27		
	COM28		
	COM29		
	COM30	-	

12. Make sure that the changed COM Port Number is applied and select **OK**.

Advanced Settings for COM4		-?
COM Port Number: COM2	. [ОК
USB Transfer Sizes Select lower settings to correct performance problems at low b Select higher settings for faster performance.	aud rates.	Cancel Defaults
Receive (Bytes):		
Transmit (Bytes):		
BM Options	Miscellaneous Options	
Select lower settings to correct response problems.	Serial Enumerator	V
Latency Timer (msec):	Serial Printer	
	Cancel If Power Off	
Timeouts	Event On Surprise Removal	
Minimum Read Timeout (msec): 500 💌	Set RTS On Close	
Minimum Write Timeout (msec):	Disable Modem Ctrl At Startup	

13. Restart the computer after finishing the driver setting.

Measurement

Lambda 265/465 with UV Lab Software

NOTE: In case of Lambda 465, start the sample measurement after warming up the system at least 20 minutes.

1. Launch the UV Lab software. When the following window appears, select **Experiment Type** and click **OK**.

S New			×
Title Comment	Untitled-1		<u>O</u> K <u>C</u> ancel
Sample Name	Sample		
Experiment Type	Wavelength Monitoring	•	

2. Select Measure → Options → Instrument Setting → Peristaltic Pump Setup.

		Options	×
		Mode Others Instrument Setting Path	ок
		Peristaltic Pump Setup	Cancel
Meas <u>u</u> re			
📋 Run Blank	Alt+B		
🔋 Run Sample	Alt+S		
🚽 Method	Alt+M		
Validation			
Options			
Instrument	×		

3. The following box will be displayed. Enter each parameter.

Peristaltic Pump		
Peristaltic Pump Setting Automatic Peristaltic Pump	Yes 🔽	Port Find Download the parmaters to the Controller
COM Port No.	1	Test Peristaltic Pump
Pumping Speed (RPM)	100	Stop OK
Pumping Direction Pumping Time (Sec)	CW 🔽	
Stabilizing Time (Sec)	5	
Washing Time (Sec)	5	

- > Automatic Peristaltic Pump: Select **Yes**.
- > COM Port No.: Click **Port Find**. The COM port no. will be selected automatically.
- > Pumping Speed (RPM): Enter the Pumping Speed. (0.1 ~ 100)

- Pumping Direction: Select the Pumping Direction. You can select either CW (clockwise) or CCW (counter-clockwise).
- Pumping Time (Sec): Enter the pumping time of a sample. Enter sufficient time to remove the waste which in rest in the flow-through cell.
- Stabilizing Time (Sec): Enter the stabilizing time after pumping a sample. Measurement will be started after stabilizing finished.
- > Washing Time (Sec): Enter the washing time after measuring a sample.
- 4. Select **Port Find**. The following box will be displayed, click **OK**.

Peristaltic Pump	•••
Finding the COM Port: OK! CON	1 Number(5)
	ОК

5. After set the parameters and click **Download the parameters to the Controller**.

Peristaltic Pump Connected. COM(5)		
Peristaltic Pump Setting Automatic Peristaltic Pump	Yes 🗸	Port Find
		Download the parmaters to the Controller
COM Port No.	5	Test Peristaltic Pump
Pumping Speed (RPM)	100	Stop
Pumping Direction		ОК
Pumping Time (Sec)	5	
Stabilizing Time (Sec)	5	
Washing Time (Sec)	5	

6. The following box will be displayed, click **OK**.

UV Lab	×
i	Downloading Successful
	ОК

7. If you want to run a trial test with this setting, select **Test Peristaltic Pump**.

Peristaltic Pump Connected. COM(5)		
Peristaltic Pump Setting Automatic Peristaltic Pump	Yes	Port Find [Download the parmaters to the Controller]
COM Port No.	5 💌	Test Peristaltic Pump Stop
Pumping Speed (RPM) Pumping Direction	100 CCW	OK
Pumping Time (Sec)	5	
Stabilizing Time (Sec) Washing Time (Sec)	5	

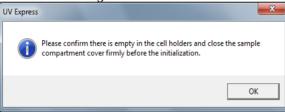
- 8. After finishing the test run, select **OK**.
- 9. Select **OK** on **Option**s window.

Mode Others Inst	ument Setting	ОК
Pe	ristaltic Pump Setup	Cancel
	UV Lab	

- 10. Prepare the blank solution.
- 11. Select the **Blank** icon. Pump through the blank solution and measure the blank spectrum.
- 12. Prepare the sample solution.
- 13. Select the **Sample** icon. Pump through the sample solution and measure the sample spectrum.

Lambda 365 with UV Express Software

- **NOTE:** Start the System Self Tes t after warming up the system at least 20 minutes.
 - 1. Double-click **UV Express** folder and select Measurement mode, e.g. **Scan** mode, for starting.
 - 2. The following window will be shown. Empty the cell holder and close the lid firmly.
- **NOTE:** When performing System Self Test, both reference and sample cell holder has to be emptied. Please remove cuvettes including the flow cell from cell holder.



- 3. Click **OK** after finishing the System Self Test.
- 4. Click New to open a new window. Select Experiment Type and click OK.

Mew New			×
Title Comment	Untitled-1		<u>O</u> K Cancel
Experiment Type	Scan Setup	•	

- 5. Click Method for set up parameter and then Click Accessory tab.
- 6. Select the **Sipper** in the **Accessory type** and click **Connection Check** and then **Method Setup** will be activated. Click **Method Setup**.

Kethod - C:\UV Express\Method\Default.gmtd	×
Experiment Lamp Internal Reference Scan Setup Accessory	
Accessory Type Sipper Connection Check Method Setup	
Save as Default Apply OK Cancel	

NOTE: Check the communication between Computer and peristaltic pump if the **Method setup** is inactivated.

7. The peristaltic pump setup box will be shown. Set each parameter according to the experiment conditions.

Peristaltic Pump		
Peristaltic Pump Setting		
Select Pump Model	Version 1	Download the parmaters to the Controller
Pumping Speed (rpm)	20	Test Peristaltic Pump
Pumping Direction	CW	Stop
Pumping Time (Sec)	120	ОК
Stabilizing Time (Sec)	0	
Washing Time (Sec)	0	

- Select Pump Model: Select the model Version 1.
- > Pumping Speed (rpm): Enter the pumping speed. (0.1 ~100)
- Pumping Direction: Select the pumping direction. You can select either CW (clockwise) or CCW (counter-clockwise).
- Pumping Time (Sec): Enter the pumping time of a sample. Enter sufficient time to remove the waste which is rest in the flow-through cell.
- Stabilizing Time (Sec): Enter the stabilizing time after pumping a sample. Measurement will be started after stabilizing finished.
- > Washing Time (Sec): Enter the washing time after measuring a sample.
- 8. If the parameters is set, click **Download the parameters to the Controller**.

Peristaltic Pump Setting —		
Select Pump Model	Version 1	Download the parmaters to the Controller
Pumping Speed	20	Test Peristaltic Pump
Pumping Direction	ccw	Stop
Pumping Time (Sec)	120	ок
Stabilizing Time (Sec)	0	
Washing Time (Sec)	0	

9. The following dialog box will be displayed, then click **OK**.



10. If you want to run a trial test with this setting, select **Test Peristaltic Pump**. After finishing the test run, select **OK**.

Peristaltic Pump		
Peristaltic Pump Setting		
Select Pump Model	Version 1	Download the parmaters to the Controller
Pumping Speed	20	Test Peristaltic Pump
Pumping Direction	CCW 💌	Stop
Pumping Time (Sec)	120	ОК
Stabilizing Time (Sec)	0	
Washing Time (Sec)	0	

- **NOTE:** Click **Download the parameters to the controller** when the parameter is changing or COM Port No. is newly finding.
 - 11. After completing the parameter setup, slect **Apply** and **OK**.

Method - C:\UV Express\Method\Default.gmtd
Experiment Lamp Internal Reference Scan Setup Accessory
Accessory Type
Sipper Connection Check
Method Setup
Save as Default Apply OK Cancel

- **NOTE:** For more details of the method setup, refer to **Measurement mode** in the UV Express Software Users Guide.
 - 12. Insert flow cell into the sample cell holder. If necessary, insert reference sample into the reference cell holder additionally.
 - 13. Dip inlet tube of peristaltic pump into the reference solution and Click **Baseline**.
 - 14. Remove inlet tube from reference solution and insert that into the sample solution. Click **Sample**.
 - 15. After the measurement is finished, the results are displayed in the result window. Save or print results as required.

Troubleshooting

When liquid leaks out of the flow cell and tube

- 1. Replace the tube.
- 2. Replace the flow cell.

When the COM port could not opened

RS-232 Cable

- 1. Replace the cable.
- 2. Replace the cable to the USB to RS-232 Cable.

USB to RS-232 Cable

> See the procedure port Setting of USB to RS-232 Port on page 154.