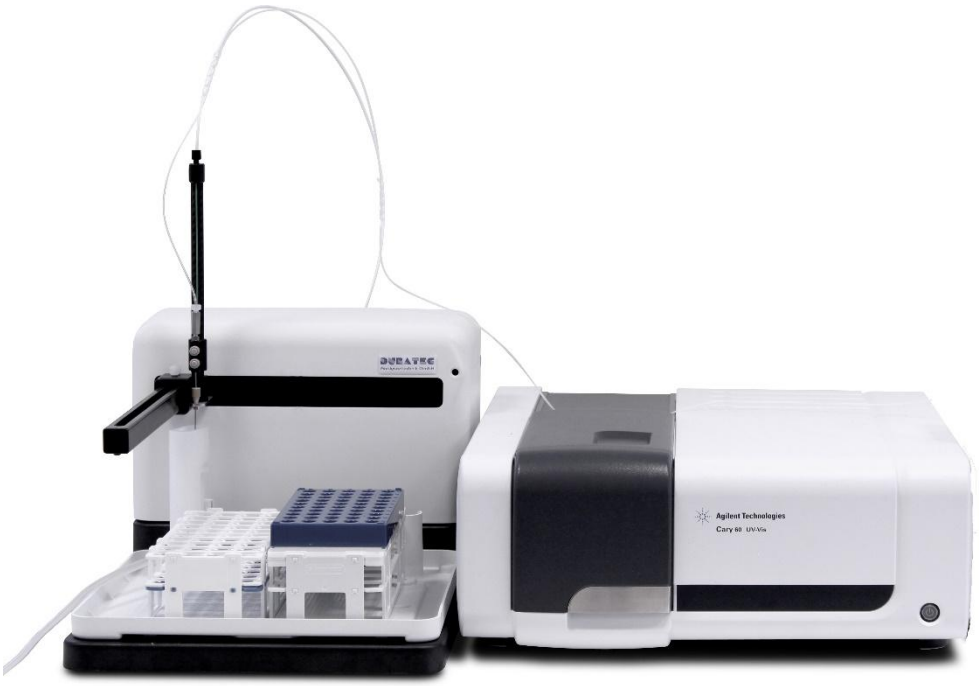
Manual
ASAP-4-Cary



DURATEC Analysentechnik - ASAP-4-Cary Version 1.0.7941.19582

DURATEC
Analysentechnik GmbH
ASAP-4-Cary

Contents

1 Specifications

Article: **810930**

Scope of delivery: ASAP-4-Cary : Automated sample processing software for Cary WinUV software modules „Concentration", „Advanced Reads" & „Scan".

Requirements: Windows 7 and higher, 2GB RAM, dotNet 4.5

Article: **810924**

Scope of delivery: Sample station PSC-280 with 2 rack positions, rinse station sample needle carbon/ PTFE ID 0,8mm (P/N 810923-004)

Dimensions : H 620mm / W 355mm / D 550mm
Weight: 8.1 kg
Rack positions: 2
Power requirement: 100-240 VAC, 37-63 Hz, 1.
Control: RS232, USB

Article: **810925**

Scope of delivery: Sample station PSC-560 with 4 rack positions, rinse station sample needle carbon/ PTFE ID 0,8mm (P/N 810923-004)

Dimensions: H 620mm / W 580mm / D 550mm
Weight: 11.7 kg
Rack positions: 4
Power requirement: 100-240 VAC, 37-63 Hz, 1.9
Control: RS232, USB

Article: **810923-026**

Description: Option: integrated persitaltic pump for sample flow and rinse sample needle

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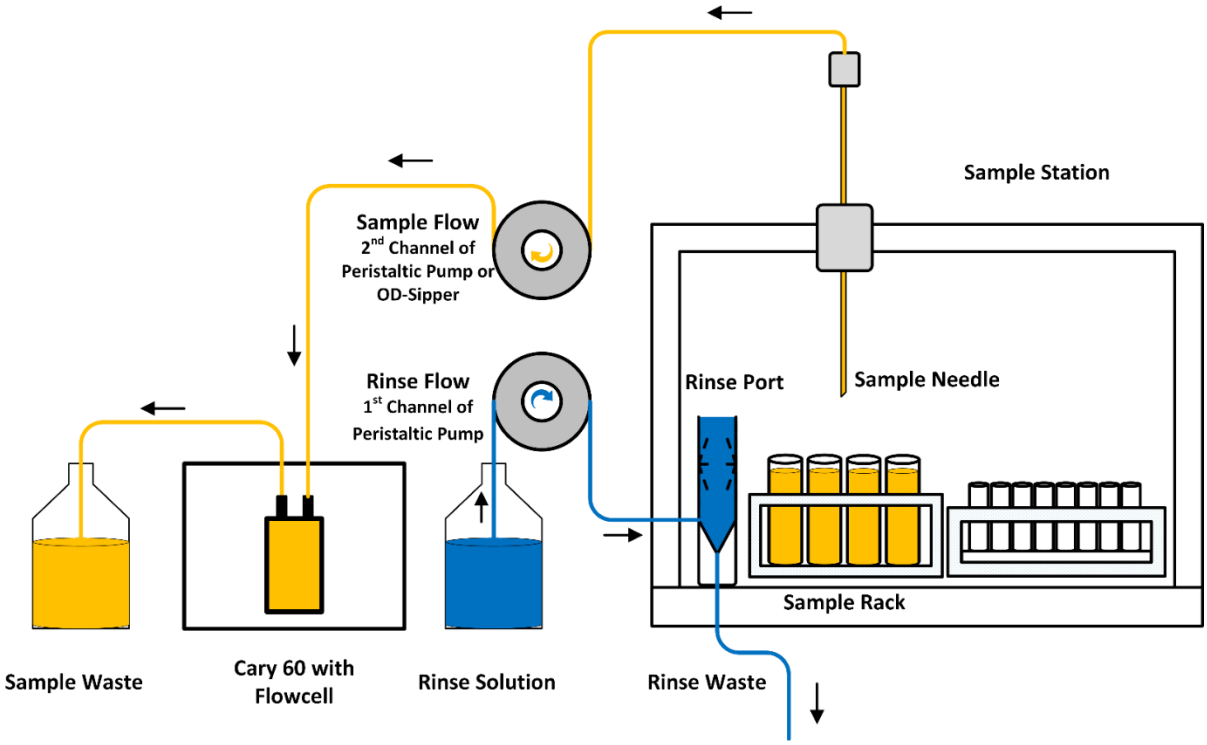
Article: **810930-001**

Description: Connecting cable USB to RS232 for PS-C280/560

Article: **810930-002**

Description : Connecting cable USB to RS232 for Agilent OD Sipper

2 Operating principle



The automated processing of sample sequences in a Cary 60 system can be realized by embedding a sample station together with a peristaltic pump. Settings and execution are performed within the Cary WinUV software without opening a separate software-program. Liquid samples are filled in tubes and placed in racks on the sample station. A sample needle moves sequentially to each position and transfers the liquid medium via a peristaltic pump into a flow-cell in the Cary 60 compartment. Then the signal is automatically collected. The sample needle can be cleaned between two samples in a rinse port to avoid contamination or carry over. During the run there is no interaction required from the end-user which enables free resources for other tasks

2.1 Workflow of a sample-sequence:

Samples to be measured are filled in suitable vessels (Vials, Tubes) and placed in racks on the sample station. In the Cary WinUV software the end-user edits via the setup menu the instrument settings for the Cary 60. From this menu an additional setup-dialog is called for settings of the sample station respectively the peristaltic pump. As soon as all information for a sample sequence is entered, the analyze run can be launched by click on the START-button. The sample station moves to the according position and the sample needle dives into the sample liquid. The peristaltic pump (or OD-Sipper) transfers the required sample volume into the flow-cell in the Cary 60 compartment. After a short time for stabilization the measurement is performed. Before the needle moves to the next position it can be cleaned at the separate rinse port as option. The needle moves to the HOME-position as soon as all samples have been processed and the sequence is completed inclusive report

General workflow:

1. Switch on devices (Cary, Sample Station , OD Sipper(if used))
2. Open application ASAP 4 (Concentrations or Advanced Reads or Scan)
3. Load or create a method with specific parameters for the measurement (Agilent Cary WinUV documentation)
4. Place samples, standards and blank solution on the sample station
5. Enter the positions of the samples, standards and blank solution in the setup
6. Flushing the entire system (rinsing port to sample needle) with flushing medium
7. Start the measurement sequence
8. Save the results/report

3 Installation

3.1 Installing the drivers and software

A USB stick was supplied with the system or the software was made available for download, which contains the required setup file. Start the following programs to install:

Setup ASAP-4-Cary xxxxxxxxxx.exe

- Installs the FTDI interface driver if required
- Installs the ASAP-4-Cary modules

After the installation you will find the shortcuts on your desktop as well as in the start menu.

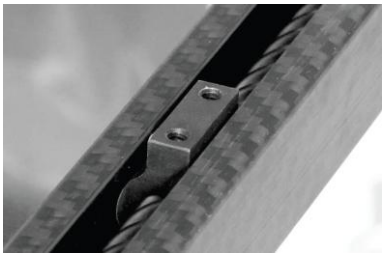
3.2 Installing the connecting cables

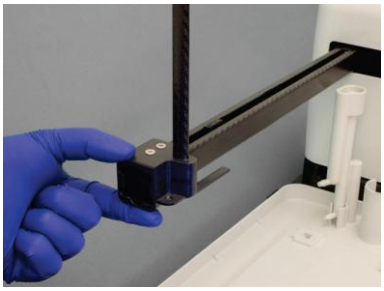
- **OD-Sipper (if used)**
  - is connected using the supplied USB-RS232 adapter cable. Use the cable with the label "OD-Sipper" and connect a free USB port on your computer to the OD-Sipper.

- **Sample Station (PS-C280 / PS-C260)**
  - is connected using the supplied USB-RS232 adapter cable. Use the cable with the label “Sampler” and connect a free USB port on your computer and the connection “COM1” of the sample station.

CAUTION!
The USB-RS232 adapter cables are no ordinary USB-RS232 adapters. The software only works with these cables. The cables are assigned to the devices and must not be mixed up.

3.3 Installing the needle unit





Slide the sample needle unit onto the arm up to the slide and fasten it with the two screws.

3.4 Installing the rinse station

Connect waste tubing to the rinsing station. Engage the rinsing station into the holder. Connect the waste tubing with a waste container. The waste container must be lower than the sampler

3.5 Installing the racks & standards

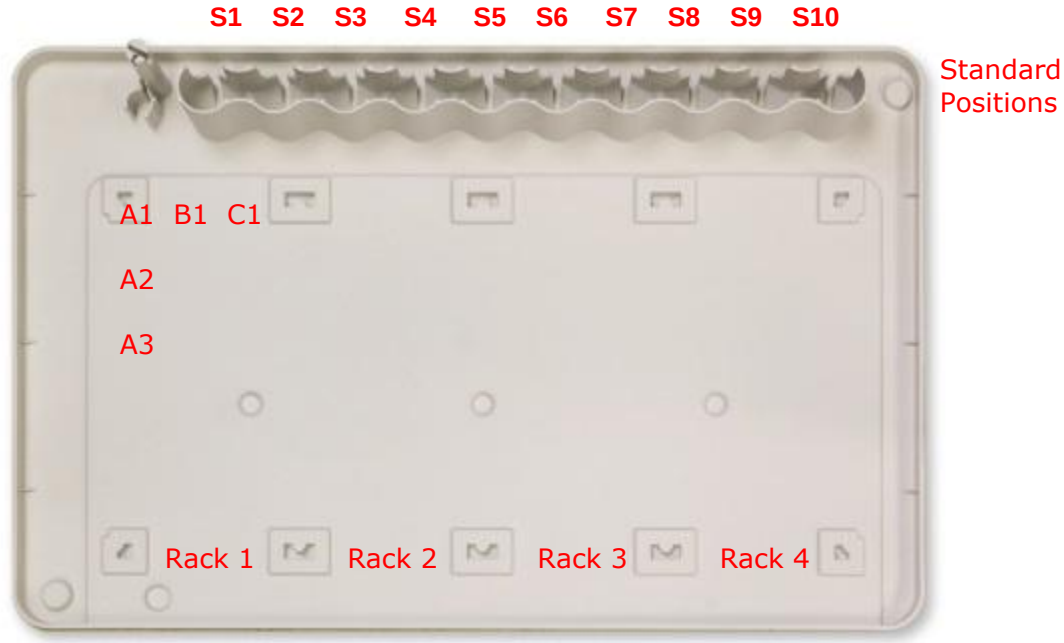
Place vial racks at the sample tray so that the feet on the rack's underside engage the locating slots on the sample tray's surface. Correctly placed sample vial racks will not move more than ±2millimeters in each direction.

The name of the racks is from left to right R1, R2, R3, R4.
The designations of the vials on the racks is as follows: (A1 rear left)

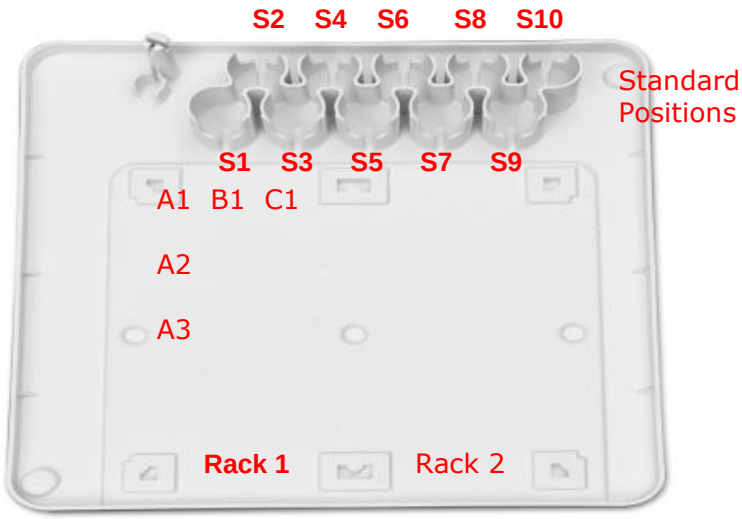
A1	B1	...
A2	B2	...
...	...	...

The complete name of each vial results from rack name, hyphen and vial position, for example: R1-A1, R2-B3

PS-C560



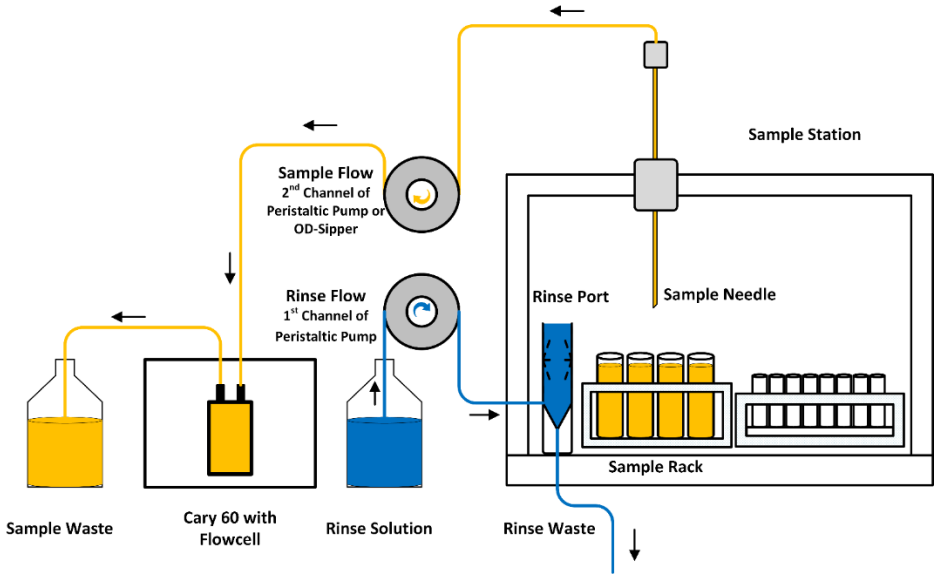
PS-C280



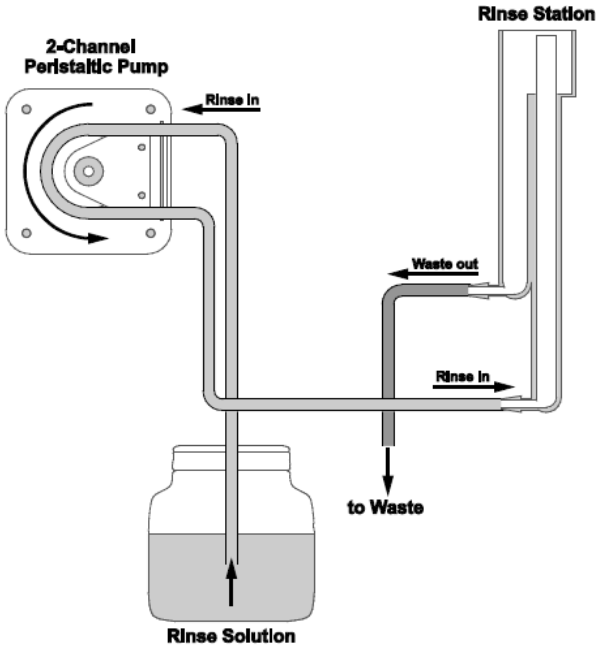
Rack types

3x7	50ml Vials	A1-A7/B1-B7/C1-C7
3x8	30ml Vials	A1-A8/B1-B8/C1-C8
4x10	20ml Vials	A1-A10/B1-B10/C1-C10/D1-D10
5x12	14ml Vials	A1-A12/B1-B12/C1-C12/D1-D12/E1-E12
6x15	7ml Vials	A1-A15/B1-B15/C1-C15/D1-D15/E1-E15/F1-F15

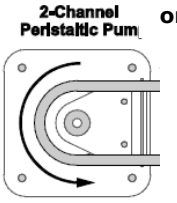
3.6 Fluidic Connections



Channel 1

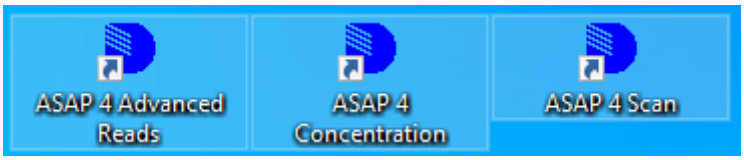


Channel 2



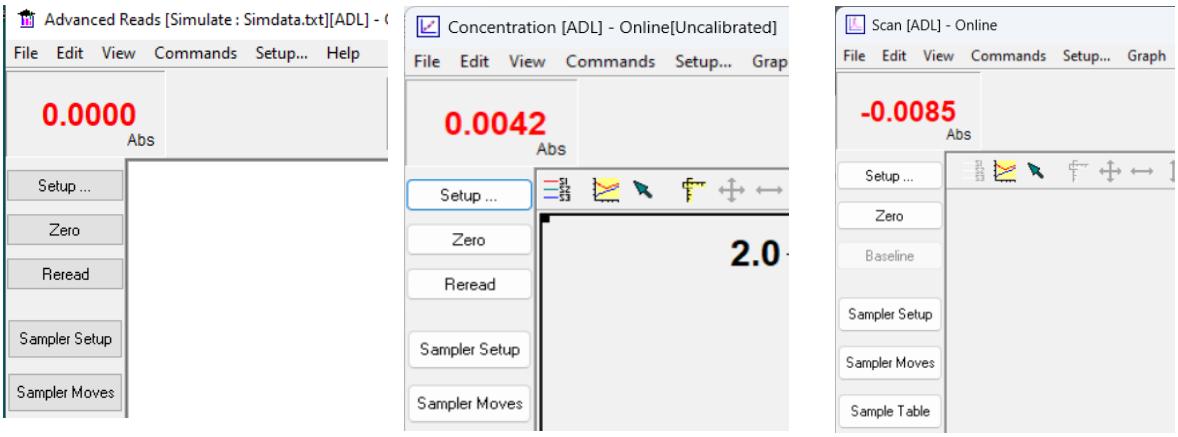
Fitting and adapter kit for sample path - inlet & outlet peristaltic pump (1/16" OD capillary & 1/8" ID tubing)

4 Software



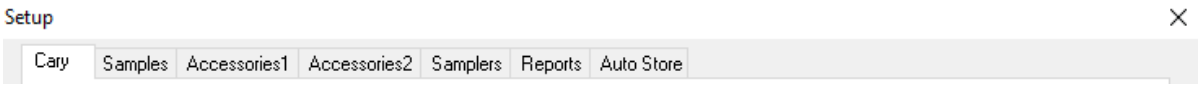
The individual ASAP-4-Cary modules only run if the Agilent Cary WinUV is installed on the computer at the same time. However, the Cary WinUV must not be open for the execution of the ASAP-4-Cary software. Before you start the software module (via icons on the desktop), please switch on the photometer, the sample station and the sipper first. The ASAP-4-Cary software module automatically opens the Cary WinUV software in the appropriate mode. The specific ASAP-4-Cary settings are made at the button "Sampler Setup".

4.1 Setup

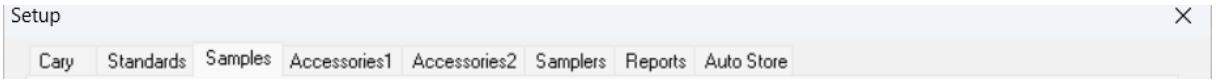


4.1.1 Setup overview

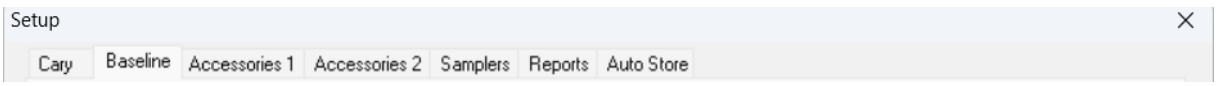
Advanced Reads



Concentration



Scan



4.1.2 Tab overview

Cary
Module: Advanced Reads / Concentration / Scan
- Setting the measurement parameter (Wavelength, Replicates, Time, Mode, …)

Samples
Module: Advanced Reads / Concentration
- Sample table (quantity & name)

Standards
Module: Concentration
- Standards table (quantity & concentration)

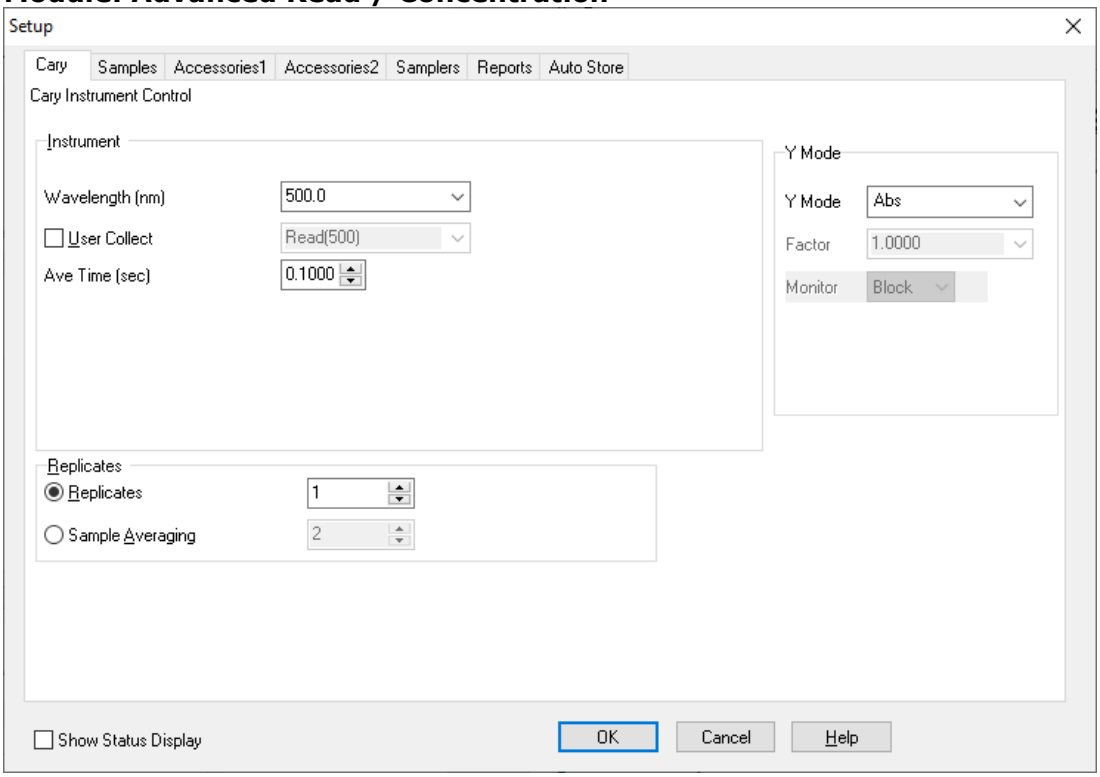
Baseline
Module: Scan
- Setting Basline mode

Accessories 1 & 2 / Samplers / Reports / Autostore
Module: Advanced Reads / Concentration / Scan
- general settings are made here

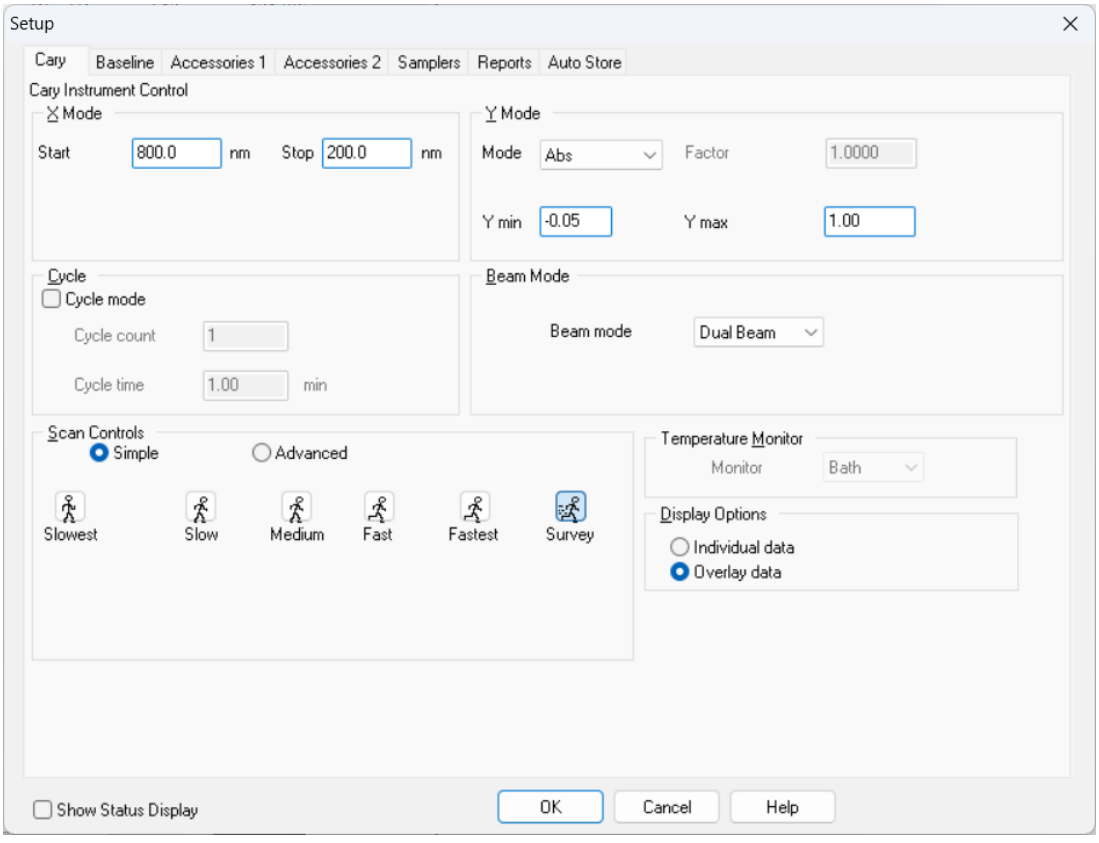
4.2 Cary Instrument Control

For more information, see the Agilent Cary WinUV documentation.

Module: Advanced Read / Concentration



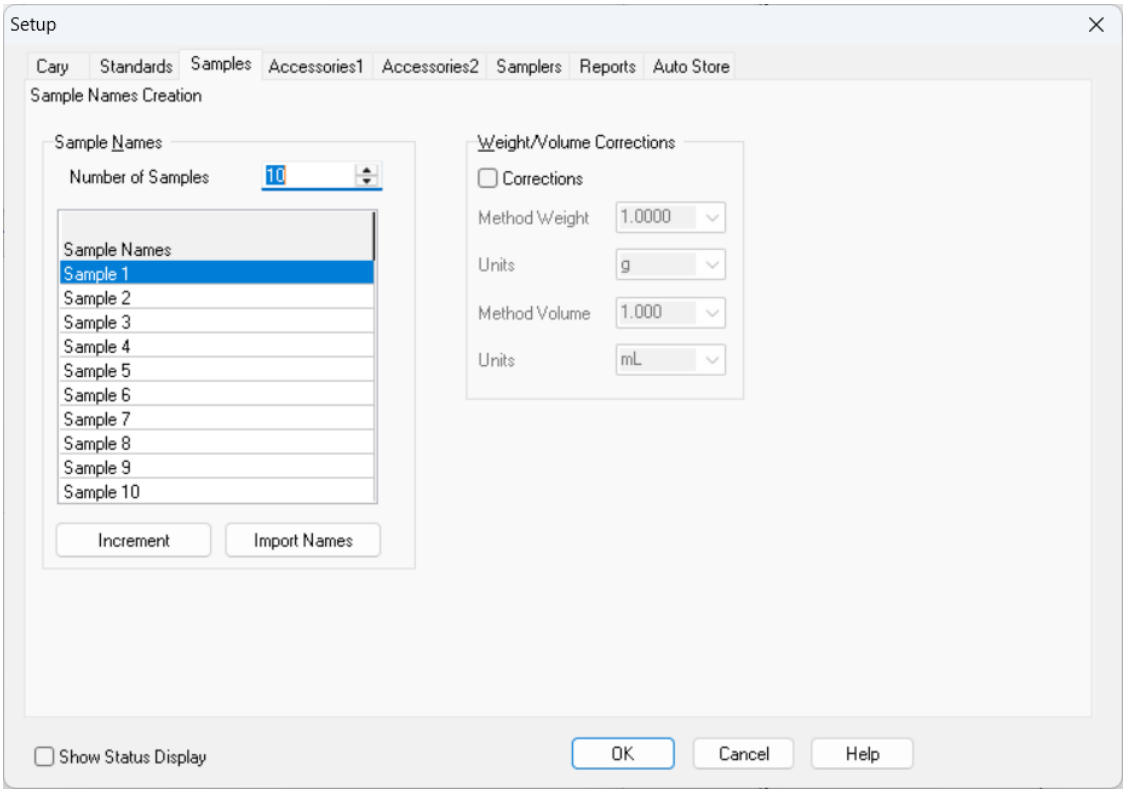
Module: Scan



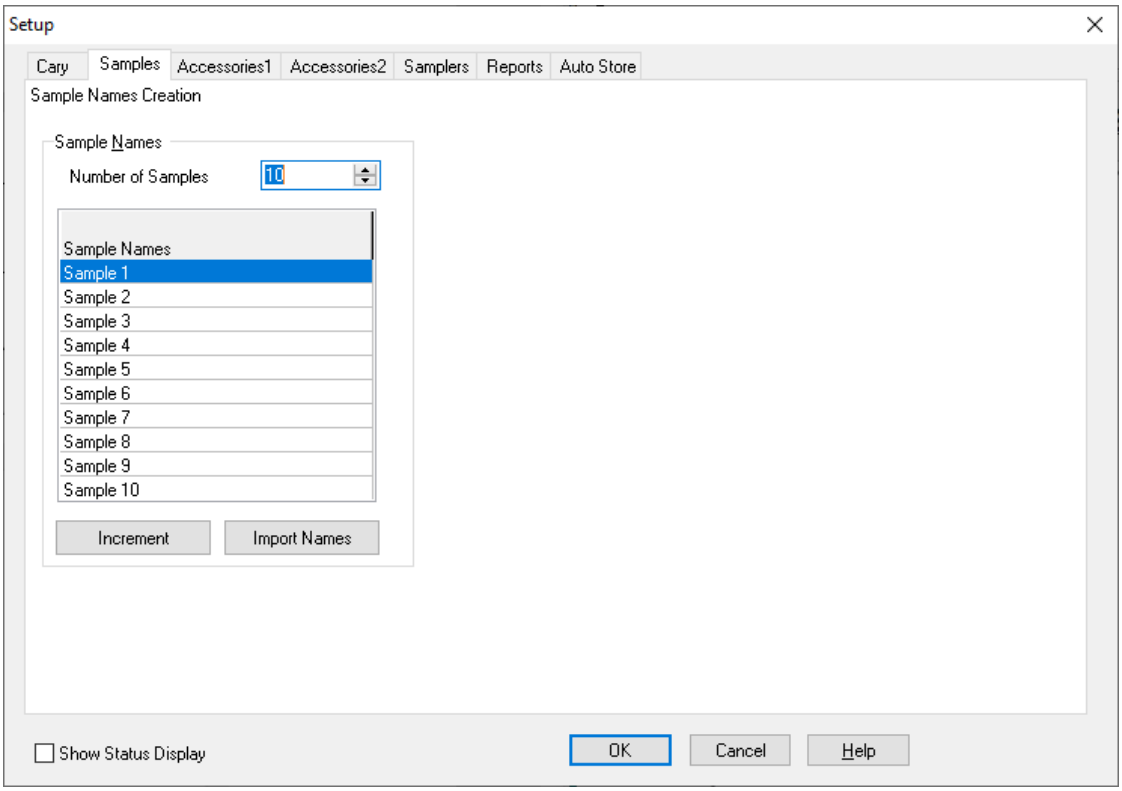
4.3 Sample Names Creation

For more information, see the Agilent Cary WinUV documentation.

Module: Advanced Read



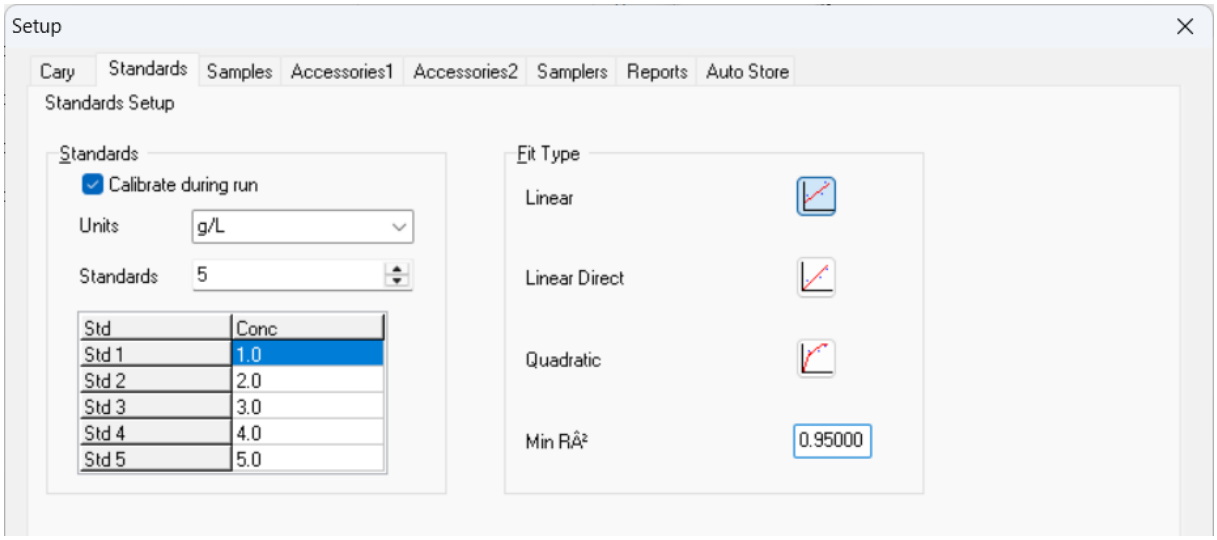
Module: Concentration



4.4 Standards Setup

For more information, see the Agilent Cary WinUV documentation.

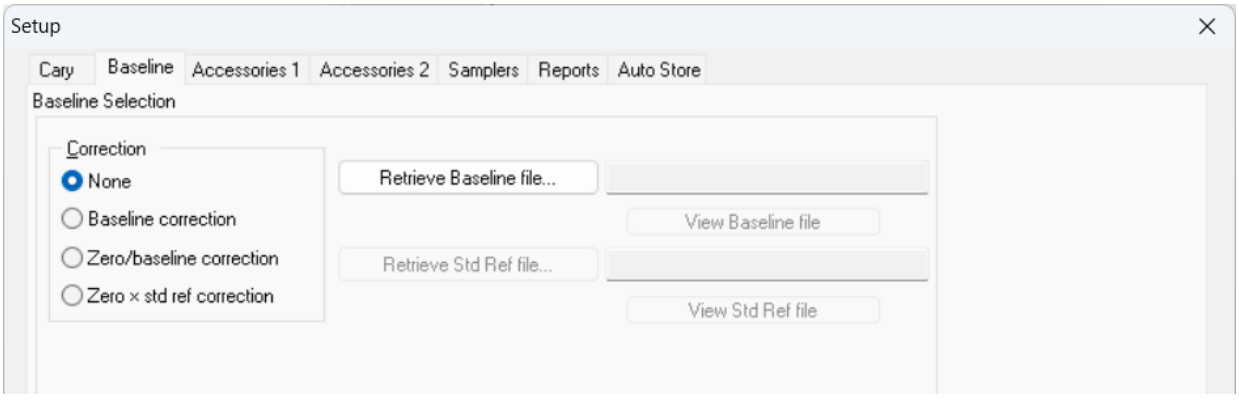
Module: Concentration



4.5 Baseline Selection

For more information, see the Agilent Cary WinUV documentation.

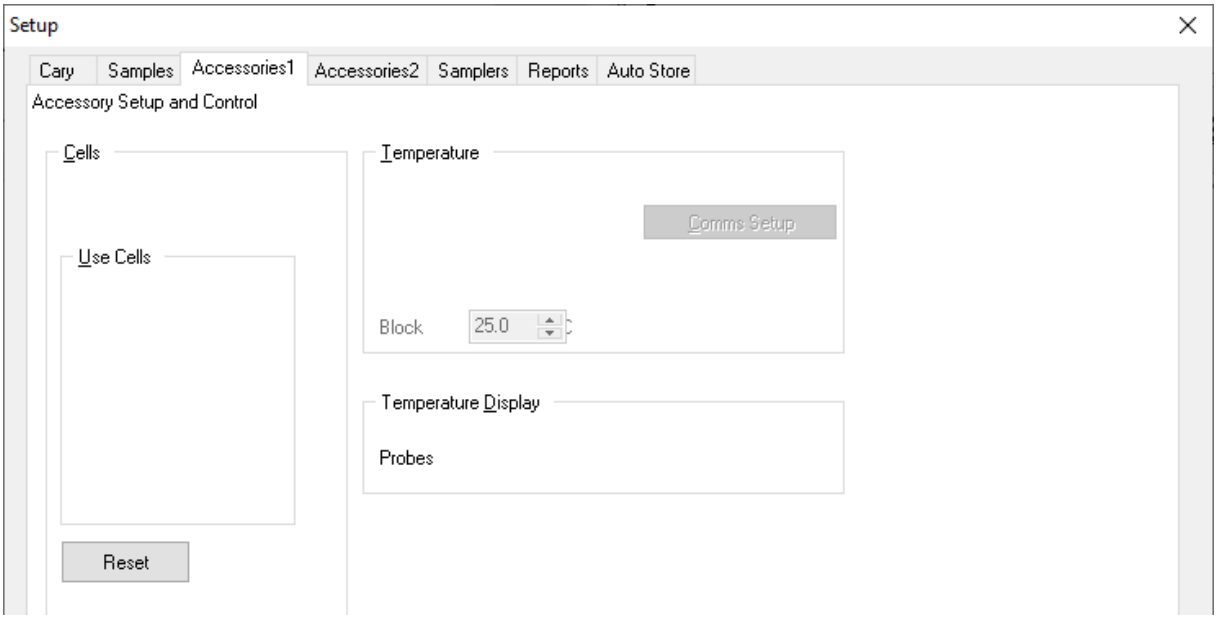
Module: Scan

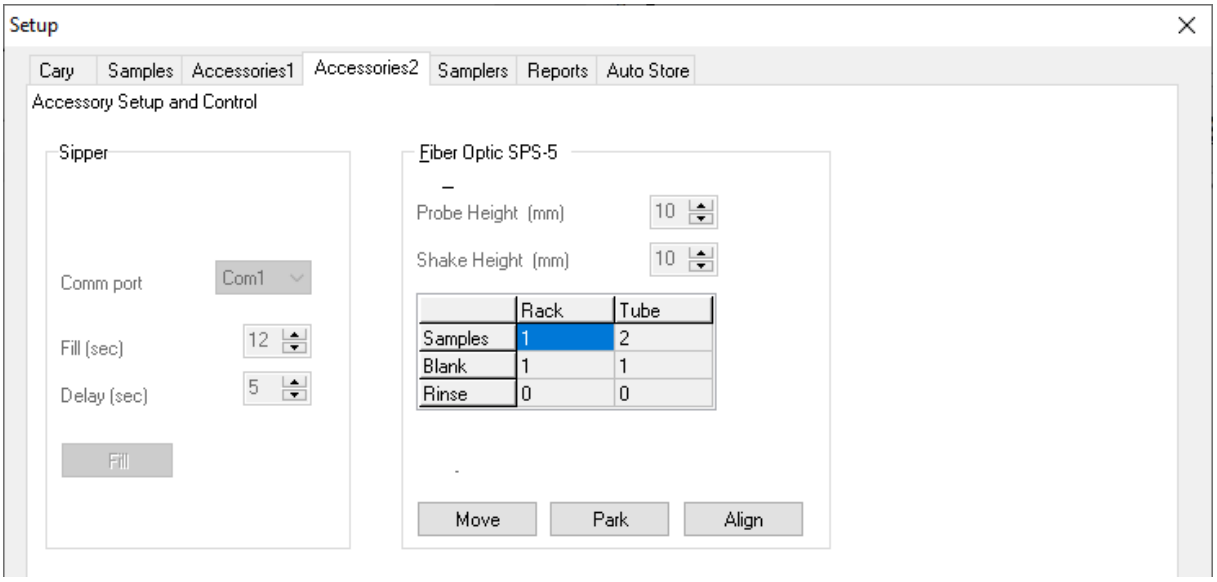


4.6 Accessories 1 & 2 / Samplers / Reports / Auto Store

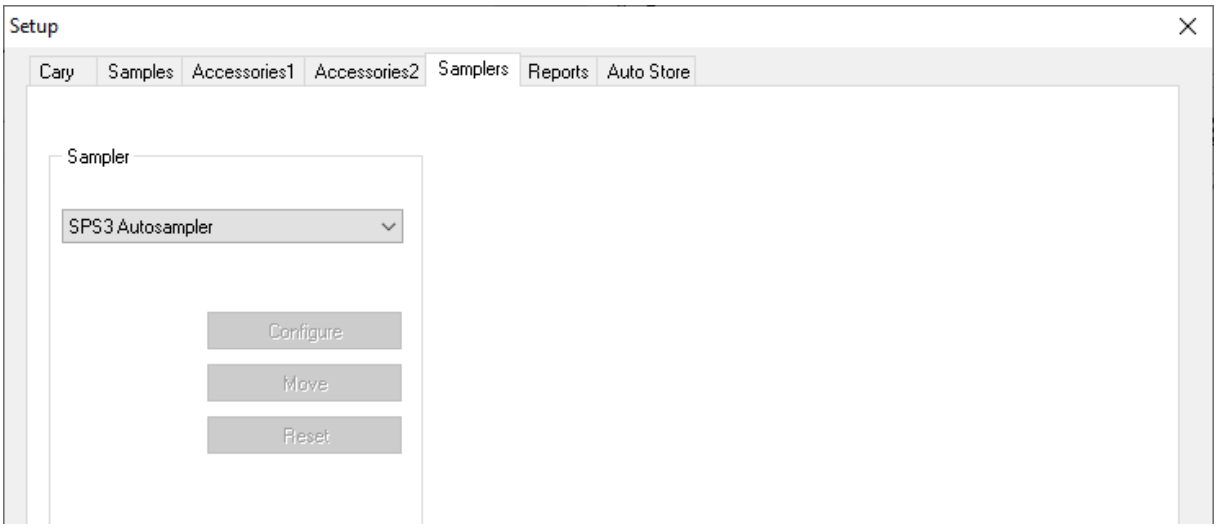
For more information, see the Agilent Cary WinUV documentation.

Module: Advanced Read, Concentration, Scan

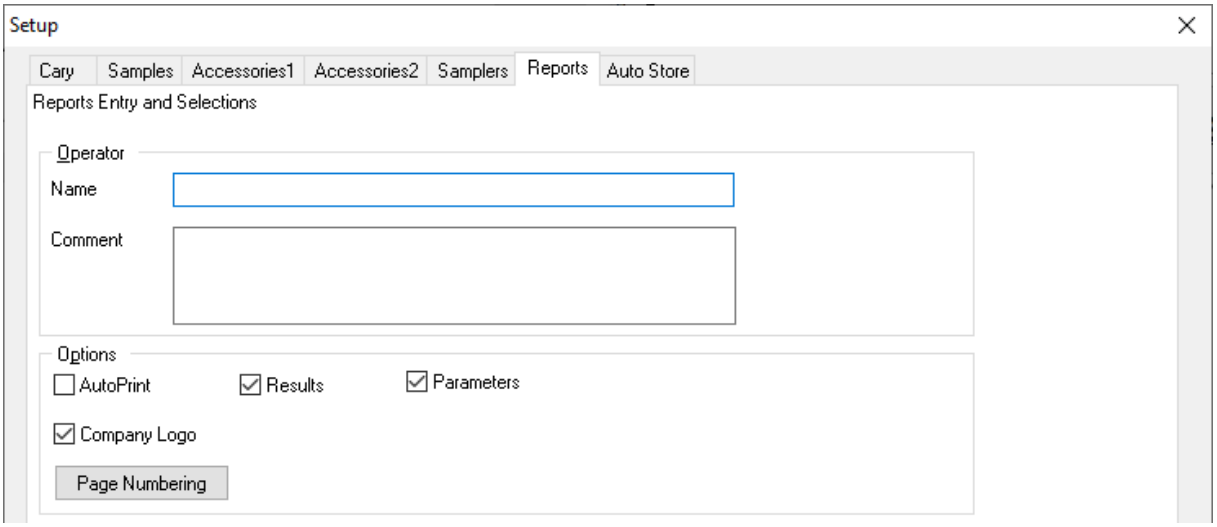


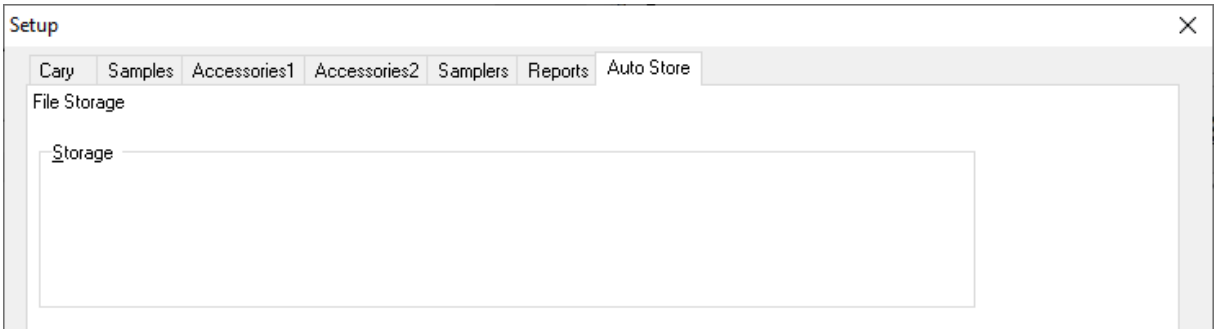


Do not select anything in the sipper menu. If the OD Sipper is to be used, go to the "ADL" tab.



Do not select anything in the Samplers menu. The settings for the sampler are made via the ADL menu.



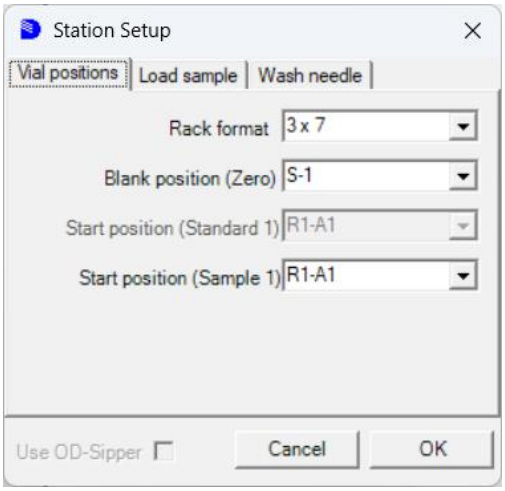


4.7 Sampler Setup / Sampler Move

Module: Advanced Read, Concentration

4.7.1 Sampler Setup

Vial Positions



Rack Format: Selection field for racks. Only one rack format can be used for a run. For definition and naming of the rack types see „3.5 Installation of Racks & Standard"

Blank position (Zero): Selection for the position for the blank or zero measurement

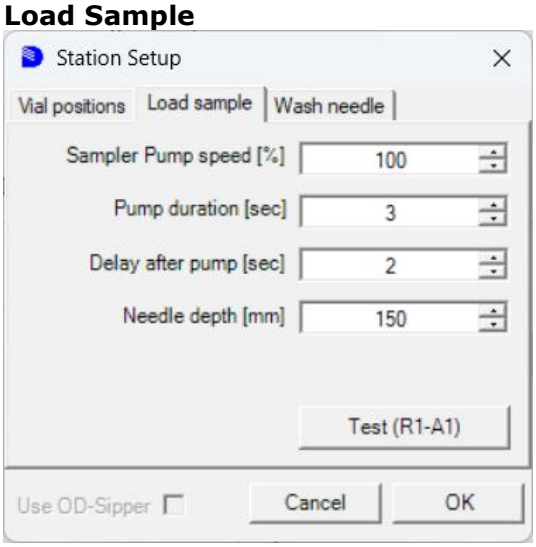
Start position (Standard): Selection for the start position of the standards (only Concentration)

Start position (Sample 1): Selection of the starting position for measuring the samples. The order is then defined via the order in "samples" in combination with the assignment in the rack

1	**8**	**15**
2	**9**	**16**
3	**10**	**17**
4	**11**	**18**
5	**12**	**19**
6	**13**	**20**
7	**14**	**21**

Use OD-Sipper: Must be selected when using the OD Sipper

Load Sample



Pump Speed: Can only be set if the sample station pump is used as the "sample pump" - This only applies to models 280 & 560. Sample station models 260/520 and the OD-Sipper only run at one speed.

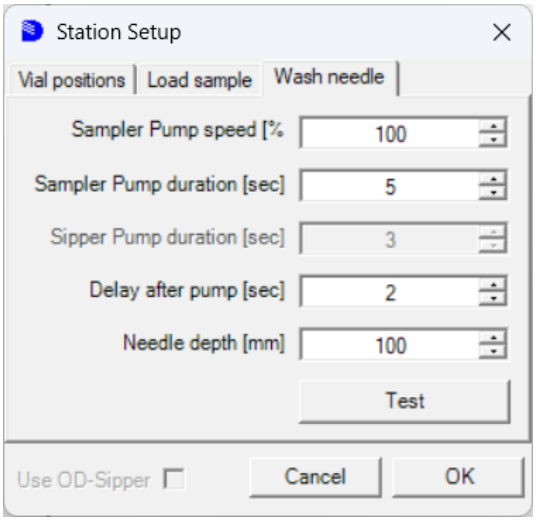
Pump duration: Duration for pumping the sample through the flow cell

Delay after pump: Time between the end of pumping and the recording of the measured value

Needle depth: Immersion depth of the needle in the sample, standard or blank vials

Test: Testing the selected parameters, e.g. to evaluate the correct settings

Wash needle



Sampler pump Speed: Speed of the sample station pump when washing

Sampler pump duration: Duration of flushing the rinse port. If the OD Sipper is used, this time should be at least 2-5 seconds longer than the "Sipper pump duration".

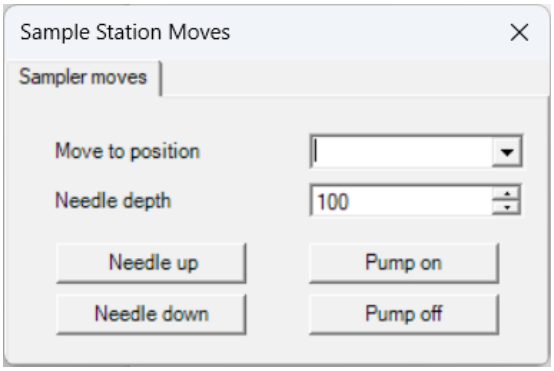
Sipper pump duration: Duration of flushing of the flow cell via the needle (only active if the sipper is used)

Delay after pump: Time between the end of pumping and the recording of the measured value

Needle depth: Immersion depth of the needle in the rinse station

Test: Testing the selected parameters, e.g. to evaluate the correct settings

4.7.2 Sampler Move



Testing the sample station functions.

4.8 Start sample sequence

1. Switch on devices (Cary, Sample Station , OD Sipper(if used))
2. Open application ASAP 4 (Concentrations or Advanced Reads or Scan)
3. Load or create a method with specific parameters for the measurement (Agilent Cary WinUV documentation)
4. Place samples, standards and blank solution on the sample station
5. Enter the positions of the samples, standards and blank solution in the setup
6. Flushing the entire system (rinsing port to sample needle) with flushing medium (use "Test" function in "Sampler setup" – "Wash needle"
7. Start the measurement sequence
8. Run "Zero" (if necessary)
9. Run "Baseline" (if necessary – only Scan)
10. Start the measurement sequence 

11. The samples are now processed one after the other, between two samples the needle is rinsed according to the setup settings.
12. Save the results/report

4.9 Stop sample sequence

The sample sequence can be ended during the run using the "Stop" button. After the stop has been triggered, the sample needle moves into the rinsing port and is rinsed. If you start again, the sequence will be executed again from the beginning and not from the position where it was stopped.

DURATEC Analysentechnik GmbH

Rheinauer Str. 4
D-68766 Hockenheim (Germany)

Tel. +49 6205 9450 – 0
Fax +49 6205 9450 – 33

support@duratec.de
https://www.duratec.de/en/