# Cary IC\_QSG\_378P

Cary Spectrophotometer Auto-Sampler: Quick Start Guide

# Agilent Technologies SPS3 (SPS3)

The Agilent Technologies SP3 autosampler facilitates sample introduction into the Cary Spectrophotometer with minimal operator time. Yay! The SP3 is connected to PC via RS232 cable to Keyspan USB convertor.



The SP3 is connected to Cary unit via RSA sample inlet tube.



The reservoir peristaltic pump allows DI water to be pumped through the system between samples to flush lines.



Pump speed is controlled by a dial above the pump. This pump fills the reservoir but does not change the flow into the Cary's flow cell; that is controlled by the spectrometer's peristaltic pump. (fills reservoir but does not change flow into Cary). That is controlled by the Cary's peristaltic pump.

Sample trays allow up to 180 samples to be run. First vial is a "zero" (DI water).



### Software setup

**Advanced Reads setup** 

|    | File Edit View ( | Commands Setup Help        |      |        |
|----|------------------|----------------------------|------|--------|
|    | 0.0007           | 🐉 Start                    | Stop | 640.00 |
|    | Setup            |                            |      |        |
| -  | Zero             |                            |      |        |
| up | Reread           |                            |      |        |
|    |                  |                            |      |        |
|    |                  |                            |      |        |
|    |                  |                            |      |        |
|    |                  |                            |      |        |
|    |                  |                            |      |        |
|    | Clear report     |                            |      |        |
|    | Recalculate      |                            |      |        |
|    | Print            |                            |      |        |
|    | 1.0-             | Deed service as a solution |      |        |

|                         | Setup  |
|-------------------------|--|
|                         | Cary Samples Options Accessories1 Accessories2 Samplers Reports Auto Store |
| nter sample information | Sample Names Creation  |
|                         |  |
|                         | Sample Names   |
|                         | Number of Samples 4  |
|                         |  |
|                         | Sample Names   |
|                         | LIQ1234561   |
|                         | LIQ1234562   |
|                         | LIQ1234563   |
|                         | LIQ1234564   |
|                         |  |
|                         |  |
|                         |  |
|                         |  |
|                         |  |
|                         |  |
|                         | Increment  |
|                         | 0  |
|                         |  |
|                         |  |
|                         | Show Status Display OK Cancel Help   |
|                         |  |
|                         |  |
|                         |  |
|                         |  |
|                         | Import comple names (text ID) from a text file                             |
|                         | import sample names (text iD) nom a text ille                              |

RSA (sipper) settings

| Carv   | Samples                    | Options    | Accessories1 | Accessories2        | Samplers            | Reports    | Auto Store |                     |
|--------|----------------------------|------------|--------------|---------------------|---------------------|------------|------------|---------------------|
| Access | ory Setup ar               | id Control |              |                     | Colored Alexand     |            |            | RSA (sipper) settin |
| Eibr   | e Optic SPS<br>Auto Sample | -5         |              | Sipper              | on                  |            |            |                     |
| Prot   | e Height (n                | mj         |              | Interna     Externa | il HSA<br>al sipper |            |            | 30 sec uptake       |
| Sha    | ke Height (i               | nm)        | 110          | Comm por            | 0                   | iom1 👻     |            | 20 and road data    |
|        | Ba                         | ick        | Tube         |                     |                     |            |            | SU Sec Teau dela    |
| Sar    | mples 1                    |            | 2            | Fill/Return         | i (sec)             | 30 🚖       |            |                     |
| Rin    | se 0                       |            | 0            | Delay (sec          | ;)                  | 5 💠        |            |                     |
| Ē      | Rinse                      |            |              | Fill                |                     | Return     |            |                     |
| м      | ove                        | Park       | Align        | 🔄 Auto re           | eturn at end        | of collect |            |                     |
|        |                            |            |              |                     |                     |            |            |                     |
|        |                            |            |              |                     |                     |            |            |                     |
|        |                            |            |              |                     |                     |            |            |                     |
|        | how Statue                 | Display    |              |                     |                     |            |            |                     |
|        | now status                 | Display    | OK           | Cancel              | H                   | elp        |            |                     |

## SPS3 configuration settings#

| Cary<br>Sa | Samples<br>ampler<br>Use Sample | Uptions   Accessories1 | Accessories2 | Samplers | Reports | Auto Sto | e | SPS3 configuration settings   |
|------------|---------------------------------|------------------------|--------------|----------|---------|----------|---|---|
| SF         | PS3 Autosan                     | npler                  | •            |          |         |          |   |   |
| V          | Rinse                           | Configure              | _            |          |         |          |   |   |
|            |                                 | Move<br>Reset          |              |          |         |          |   | <ol> <li>Click CONFIGURE to bring up the<br/>next window. Make sure that the<br/><i>Rinse</i> option is checked.</li> </ol> |
|            |                                 |                        |              |          |         |          |   | 101996.04.0.00979 • • • • • • • • • • • • • • • • • •   |
|            |                                 |                        |              |          |         |          |   |   |
|            |                                 |                        |              |          |         |          |   |   |
|            | Show Status                     | Display OK             | Cancel       |          | lelo    |          |   |   |

1. Assign a Rack Type.

| SPS3 - Setup page | Rack Properties Standard Rack Type (for racks in position 'S') Symple Rack Type | 2.                      | Click on tray (on this screen<br>the number for tray1 has<br>turned red).                       |
|-------------------|---|-------------------------|---|
|                   | 60 viel rack  | 3.                      | Assign a Rack Type.   |
|                   | System Key to tube colors Prince Ime [cec] 100 Probe Height (mm)                | 4.                      | To assign zero and samples,<br>first click tube color and then<br>click Individual tray numbers |
|                   | 0   | rinse <u>time</u> : 100 | sec   |
| Comm Setup        | Ok Cancel Help  |                         |   |

| Corn Port   | COM4 | • | 0 |  |
|-------------|------|---|---|--|
| Data Bits   | 8    |   |   |  |
| Stop Bits   | 1    | • |   |  |
| Parity      | None | • |   |  |
| Baud Rate   | 9600 | • |   |  |
| low Control | None | • |   |  |

5. Click on *Custom Racks* in the previous screen to configure sample racks.

This example shows a simple 60 vial rack.

| Custom Sample Rack Editor   |   |
|---|---|
| Racks       60 vial rack     New       Delete     Rename  | X X=23, Y=98<br>Rinse Station<br>12 11 10 19 18 12 16 15 14 12 14<br>24 23 22 21 20 19 19 18 117 16 15 14 13<br>25 25 124 123 122 14 180 129 128 127 126 125<br>48 47 46 45 44 43 42 41 40 139 138 137<br>15 56 55 756 55 54 53 52 51 50 49 |
| Layout<br>Sample Rack Style<br>Normal size<br>Layout<br>Tube Diameter<br>0 \$ Clear layout<br>Delete tube<br>0 Custom (click to place a tube)<br>Columns<br>12 \$<br>Rows<br>5 \$<br>Ureate layout<br>112 \$<br>112 \$<br>1 | Probe Movement<br>X (mm) 10 € Probe up<br>V (mm) 10 € Probe down  |
| Ok Cancel Help  | Move arm Depth (mm) 100 🗲   |

## **Running samples**

- 1. Prepare samples according to the protocol outlined in the *Cary Spectrophotometer User Guide* and let the machine warm-up for a couple of hours at the correct wavelength for the analyte in question.
- 2. Click on START in the main Advanced Reads window.
- 3. A window will pop-up showing the samples entered in the previous. Click OK.
- 4. 4. Save the data to a file for later viewing.

#### Sample Selection

| Solutions Available | Selected for Analysis  |
|---------------------|--|
|                     | <ul> <li>LIQ1234561</li> <li>LIQ1234562</li> <li>LIQ1234563</li> <li>&gt;</li> <li>&gt;</li> <li>&gt;</li> </ul> |
|                     | OK Cancel Help   |

X

| Save As            |               |        |           |   |   |   |     |              |  |
|--------------------|---------------|--------|-----------|---|---|---|-----|--------------|--|
| Look jn:           |               | AS_tes | t_19apr 👻 | 0 | 0 | 0 | B   | <del>.</del> |  |
| 💼 rinse.BAB        |               |        |           |   |   |   |     |              |  |
| 🏛 rinse2.BAł       | 3             |        |           |   |   |   |     |              |  |
| 🏦 rinse3.BAI       | 3             |        |           |   |   |   |     |              |  |
| 🏦 rinse4.BAI       | 3             |        |           |   |   |   |     |              |  |
| 🏦 rinse5.BAB       | 3             |        |           |   |   |   |     |              |  |
| 🏦 rinse6.BAB       | 3             |        |           |   |   |   |     |              |  |
| 🏦 rinse7.BAB       | 3             |        |           |   |   |   |     |              |  |
| 🏦 rinse8.BAI       | 3             |        |           |   |   |   |     |              |  |
| 🏦 test1.BAB        |               |        |           |   |   |   |     |              |  |
|                    |               |        |           |   |   |   |     |              |  |
| File <u>n</u> ame: | rinse9        |        |           |   |   |   |     | Save         |  |
| F1 ()              | Ratch (* RAR) |        |           |   |   |   | J F | Cance        |  |

5. View where the samples need to go. Click  $\ensuremath{\textbf{OK}}$  .

| SPS3 Auto-sampler - Loading Guide     | 1  | ×                                    |
|---------------------------------------|----|--------------------------------------|
| S S S S S S S S S S S S S S S S S S S |    | Key to tube colors<br>Zero<br>Sample |
|                                       |    |                                      |
| 2 Rack: 2 Tube 15                     |    |                                      |
|                                       |    |                                      |
| Please load the sampler as shown      | Ok | Cancel Help                          |

6. View the results in real-time.

| dvanced R     | eads [C:\Users\\rinse9.B                 | AB]- Online |               | - • ×   |
|---------------|--|-------------|---------------|---------|
| File Edit Vie | ew Commands Setup.                       | Help        |               |         |
| 0.000         | 1<br>Abs Sta                             | rt 💷        | <u>S</u> top  | 640.00  |
| Setup         | Comments:                                |             |               | ^       |
| Zero          | Zero Report                              |             |               |         |
| Reread        | Read                                     | Abs         | nm            |         |
|               | Zero                                     | (0.4123)    | 640.0         | 00      |
|               | Analysis                                 |             |               |         |
|               | Collection time                          | 4/          | 19/2016 11:1: | 3:01 AM |
|               | Sample                                   | F Readings  | 1             |         |
|               | LIQ1234561                               | 0.0000      | )             |         |
|               | LIQ1234562                               | 0.0001      |               |         |
| Clear report  | Results Flags Lege<br>R = Repeat reading | end         |               | E       |
| Print         | •  | m           |               |         |
| Idle          | Read sequence                            | omplete     |               |         |

- 7. Save results to a .csv file:
  - 1. Select File -> Export report (\*.csv)

- 2. Enter the location/file name.
- 8. Copy/paste into calibration spreadsheet for manipulation and subsequent use in Spreadsheet Uploader.