# User Guide
## High Resolution Quantitative Cartridge Kit (C105202-Q)

## A. Specifications

| Specification | Description |
|---|---|
| DNA Sizing Range | 20-1,500 bp |
| DNA Sizing Precision* | 2% CV |
| DNA Quantitative Precision* | 4% CV |
| Sample Number | 200 runs |
| Shelf Life | 6 months |

* Precision is determined by the 15-622 DNA Size Marker (C109200).

## B. Kit Components and Storage Conditions

| Item | Storage Condition |
|---|---|
| **High Resolution Quantitative Cartridge** (C105202-Q) | 4-30°C (Do Not Freeze) |
| **20-1,500 bp Quantitative Marker** (C109109-500Q, 500 µL) | Short-Term (≤ 3 months): 4-30°C<br>Long-Term (> 3 months): -20°C |
| **15-622 bp Size Marker** (C109200-100, 100 µL) | Short-Term (≤ 3 months): 4-30°C<br>Long-Term (> 3 months): -20°C |
| **Separation Buffer** (C104406, 50 mL) | 4-30°C |
| **Dilution Buffer** (C104405, 15 mL) | 4-30°C |
| **Mineral Oil** (C104404, 8 mL) | 4-30°C |

⚠ **Please always store cartridges in a light-proof bag, and then store in the cartridge box after analysis.**

⚠ **To maintain marker stability, avoid repeated freeze-thaw cycles.**

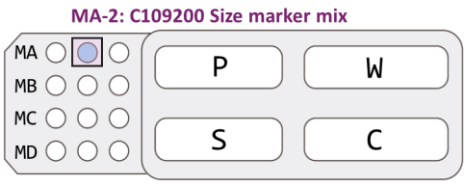
## C. Cartridge Unpacking Preparation

The new cartridge must undergo HV check and calibration. Please follow the instructions provided in the unpacking guide and calibrate using C109109 Quantitative Marker.

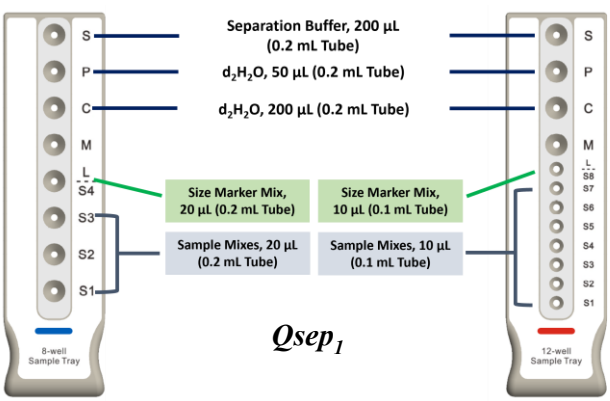
- Calibration mix for cartridge unpacking:
  - 20 bp-1,500 bp Quantitative Marker (C109109): 5 µL
  - Dilution Buffer (C104405): 15 µL

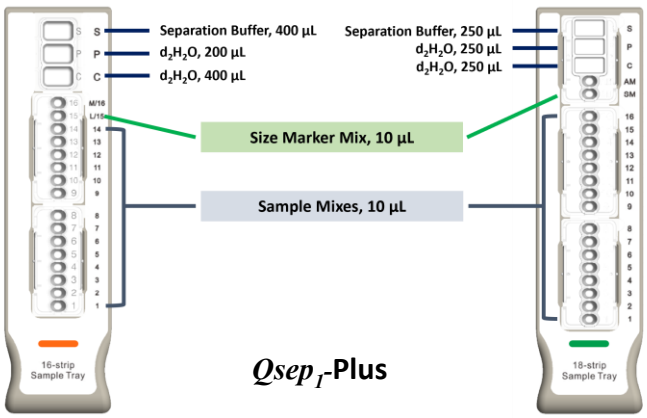
⚠ **CAUTION:** To prevent cartridge lockout after 10 failed calibration attempts, please contact your local distributor or BiOptic if the issue persists after following the troubleshooting steps in the cartridge unpacking guide.

## D. Buffer, Marker, and Sample Preparation



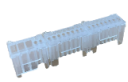

⚠ **Hold the holder steady and press the alignment marker tube firmly into the well with your thumb.**




⚠ **Ensure the buffer tray is pushed to the end until the color bar aligns with the edge of the holder.**

### 1. Compatible Sample Tubes

| | Name | Cat. No. | Volume | Image |
|---|---|---|---|---|
| Qsep100 / 8-well Sample Tray | 0.1 mL PCR Tube | - | 20 µL | |
| | 0.2 mL PCR Tube | - | | |
| 12-well Sample Tray | 0.1 mL Strip Tube | C104252 | | |
| 16-strip Sample Tray | 16-strip Sample Tube | C104254 | | |
| 18-strip Sample Tray | 18-strip Sample Tube | C104257 | |  |

### 2. Size Marker Mix for Different Size Ranges

- For Sample Size Range from 20 bp to 1,500 bp:
  - 20 bp-1,500 bp Quantitative Marker (C109109): 5 µL
  - 15-622 bp Size Marker (C109200): 10 µL
  - Dilution Buffer (C104405): 5 µL

### 3. Sample Mix Preparation

- Quantitative Marker (C109109/C109102): 5 µL
- Sample: X (2～15) µL
- Dilution Buffer (C104405): 15-X (0～13) µL

### 4. Recommended Sample Concentration

Fragmented sample: 0.2-50 ng/µL [Best: 0.5~5 ng/µL]

ℹ The recommended sample concentration indicates the final concentration for loading onto the instrument.

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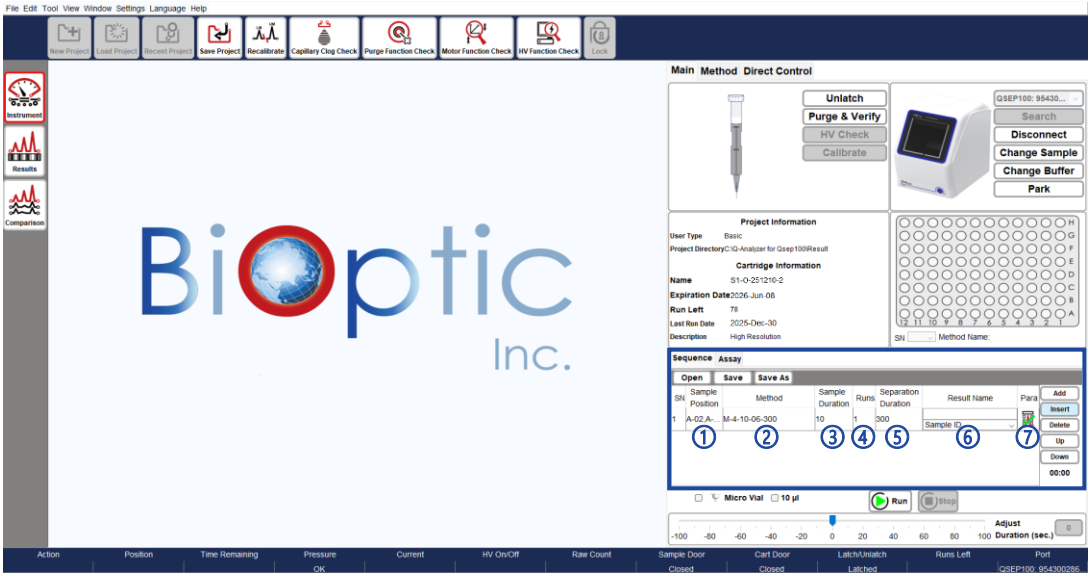
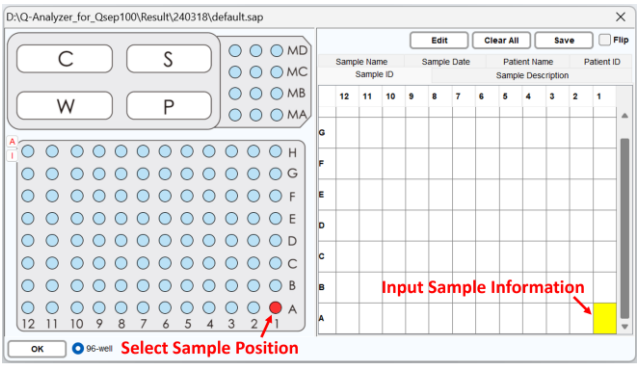
## I. Software Operation Guide

Qsep100




① Sample Position: Place the sample and select the corresponding position. Input sample information if necessary.

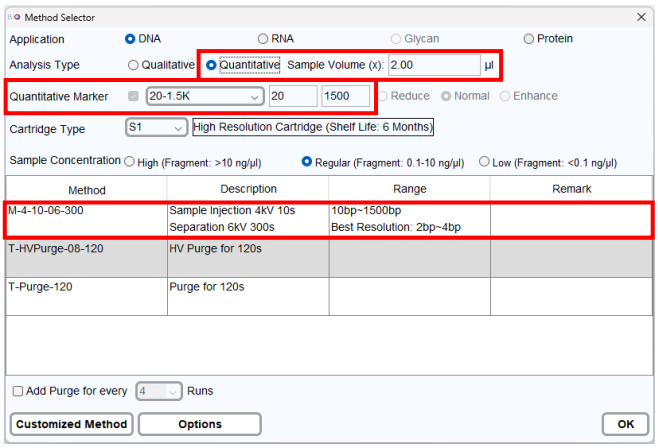



② Method:

(a) Analysis Type to **Quantitative** and input the sample volume for the sample mix.

(b) Select Quantitative Marker.

(c) Select Analytic Method in the Method Selector.




- **Adjust injection conditions based on sample concentration.**

| Sample Concentration | High (2kV, 10s) | Regular (4kV, 10s) | Low (8kV, 10s) |
|---|---|---|---|
| Fragmented DNA | > 10 ng/µL | 0.1-10 ng/µL | 0.01-0.1 ng/µL |

③ Sample Duration: Adjust the sample injection time to increase/decrease injection amount.

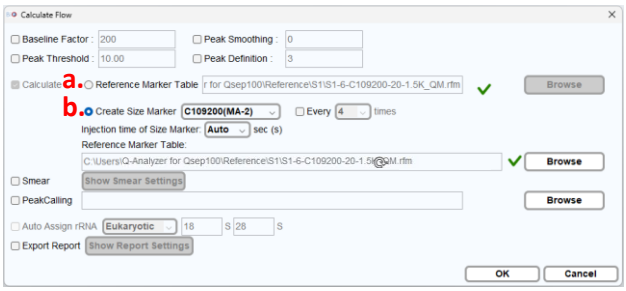
- **Modify injection conditions based on sample concentration.**

④ Runs: Set the repetition time.

⑤ Separation Duration: Adjust the duration to extend/reduce the separation time. **(Optional)**

⑥ Result Name: Input the result name for the result file.

⑦ Para: Choose between (a) Reference Marker Table and (b) Create Size Marker for calculation.

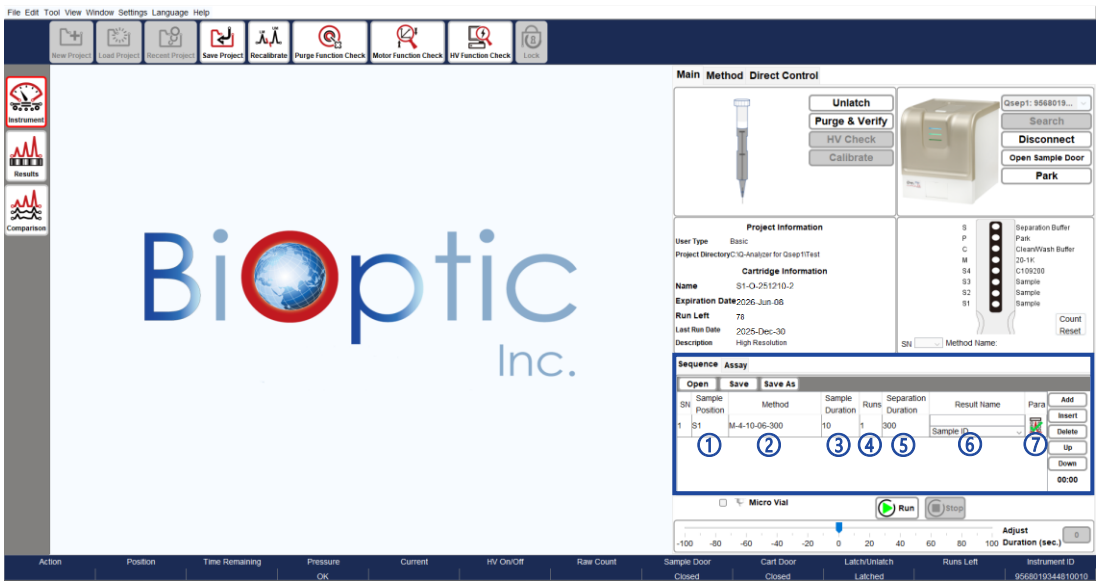



- **When using "Create Size Marker" function, select the appropriate size marker you use. For example, "20-1.5k" is paired with C109200.**

8. Click "Run" to start the sequence analysis.

# User Guide
## High Resolution Quantitative Cartridge Kit (C105202-Q)

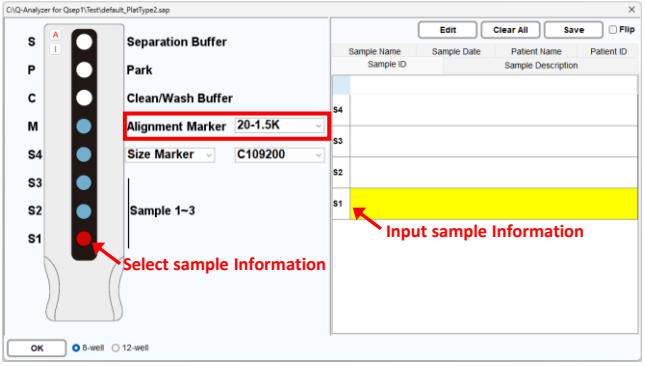
*Qsep1*



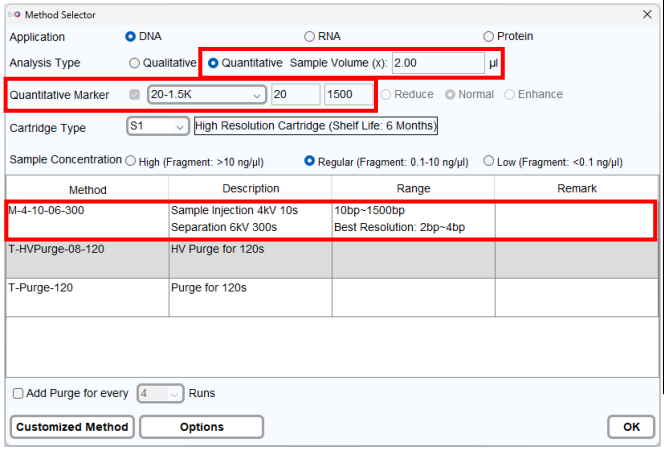

- **Click "Open Sample Door" and insert the desired sample tray**
- **Click "Park" to move the sample tray into position.**

| *Qsep1* | *Qsep1*-Plus |
|---|---|
| • 8-well Sample Tray<br>• 12-well Sample Tray | • 8-well Sample Tray<br>• 12-well Sample Tray<br>• 18-strip Sample Tray |

① Sample Position:
- Choose Alignment Marker type (20-1.5K).
- Place the paired Size Marker Mix at S4 position if required, and input the sample information if necessary.




② Method:
(a) Analysis Type to **Quantitative** and input the sample volume for the sample mix.
(b) Check Quantitative Marker.
(c) Select Analytic Method in the Method Selector.




- **Adjust injection conditions based on sample concentration.**

| Sample Concentration | High (2kV, 10s) | Regular (4kV, 10s) | Low (8kV, 10s) |
|---|---|---|---|
| Fragmented DNA | > 10 ng/µL | 0.1-10 ng/µL | 0.01-0.1 ng/µL |

③ Sample Duration: Adjust the sample injection time to increase/decrease injection amount.
- **Modify injection conditions based on sample concentration.**

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**(Optional)**

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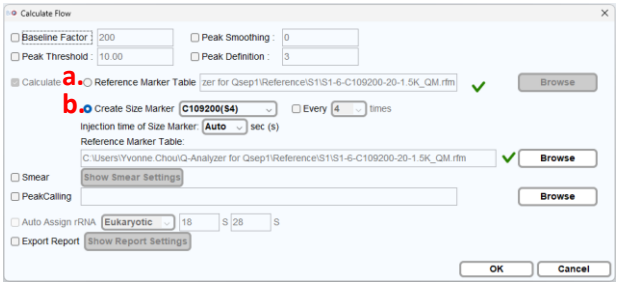
⑦ Para: Choose between (a) Reference Marker Table and (b) Create Size Marker for calculation.




- **When using "Create Size Marker" function, select the appropriate size marker you use. For example, "20-1.5k" is paired with C109200.**

8. Click "Run" to start the sequence analysis.

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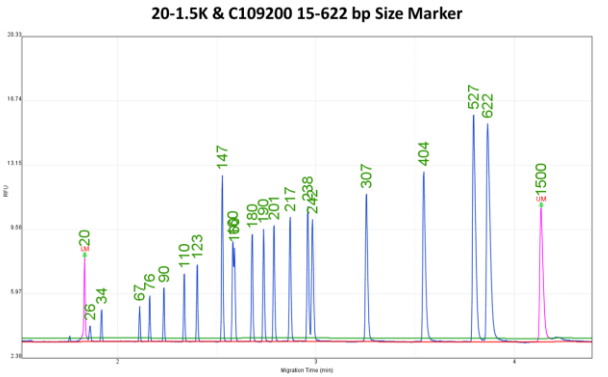
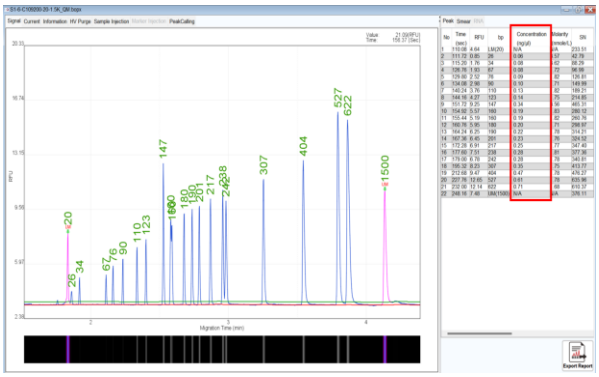
## F. Result & Application

- **Quantitative Marker & Size Marker Result**



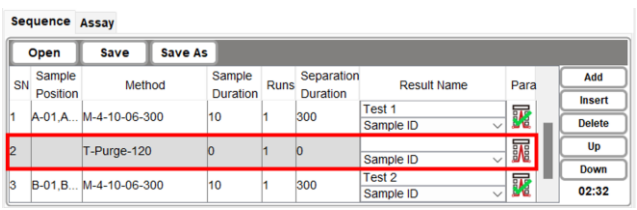




## G. Troubleshooting

Before attempting any troubleshooting, ensure that the system is functioning properly and that all operations are following the instructions.

If encountering unstable current during sample injection or separation steps, which may be caused by unknown substances in PCR reagent buffer or other kit buffers, consider the following solutions:

1. Dilute the sample using dilution buffer.
2. Centrifuge the sample for a period to allow residues to accumulate at the bottom of the tube.
3. Insert a "T-purge-120" method between several sample runs. For example, insert one run of "T-Purge-120" every 5-10 sample runs.




## H. Cartridge Disposal

Please wear gloves before discarding the cartridge.

1. Bend the cartridge tip.
2. Open the cap on the gel reservoir and remove the inner cap.
3. Pour the gel into the chemical waste container.
4. Dispose of the cartridge in the trash bin.

Contact Information:
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