



LeviMetrics Software

USER GUIDE

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ABOUT THIS SOFTWARE

LeviMetrics™ v3.1 is designed to visualize and perform analysis on experiment runs from the LeviCell® EOS system. The LeviMetrics software can be installed on the Windows 10 Pro 64-bit computer provided with the LeviCell EOS or added to any Windows 10 or 11 PC meeting the requirements below.

Current released version:	v3.1
Release date:	September 2025

Computer Requirements

Operating System:	Windows 10 or 11
Processor:	Dual-core, 2.5 GHz Processor
RAM:	32 GB installed memory

LeviMetrics Elite

The LeviMetrics analysis software can be upgraded to LeviMetrics Elite. Only LeviMetrics v3.1 or later supports upgrade options.

The LeviMetrics Elite upgrade provides a comprehensive suite of advanced powerful metrics and analysis packages. Customers who purchase this package option will receive regular updates with newly released analysis tools. These tools support deeper, more rigorous analysis, enabling users to validate and refine downstream results generated during the sample preparation process.

SOFTWARE INSTALLATION

1. Select LeviMetrics Product
2. Download the LeviMetrics MSI file to the LeviCell EOS Control PC or any computer running Windows 10 or Windows 11.
3. Locate the downloaded MSI file in your Downloads folder (or the folder you selected during download).
4. Double-click the MSI file to launch the installer.
5. Follow the on-screen instructions to complete the installation.
6. After installation, locate and use the new LeviMetrics desktop icon.



Figure 1. LeviMetrics Software Icon

If you encounter errors during the installation, contact LevitasBio Technical Support at support@levitasbio.com or by phone at +1-650-204-1185

USING LEVIMETRICS SOFTWARE

LeviMetrics software provides an easy and efficient method to view and analyze data obtained from experiments run on the LeviCell EOS system.

Main Analysis Screen

Once a run is opened, the main analysis screen is divided into three sections:

- Menu and Experiment Bar: Provides access to menus and open experiment runs.
- Run Analysis Modes Toolbar: Displays available analysis modes and tools.
- Image Viewing Area: Shows the run images and supports interactive viewing.

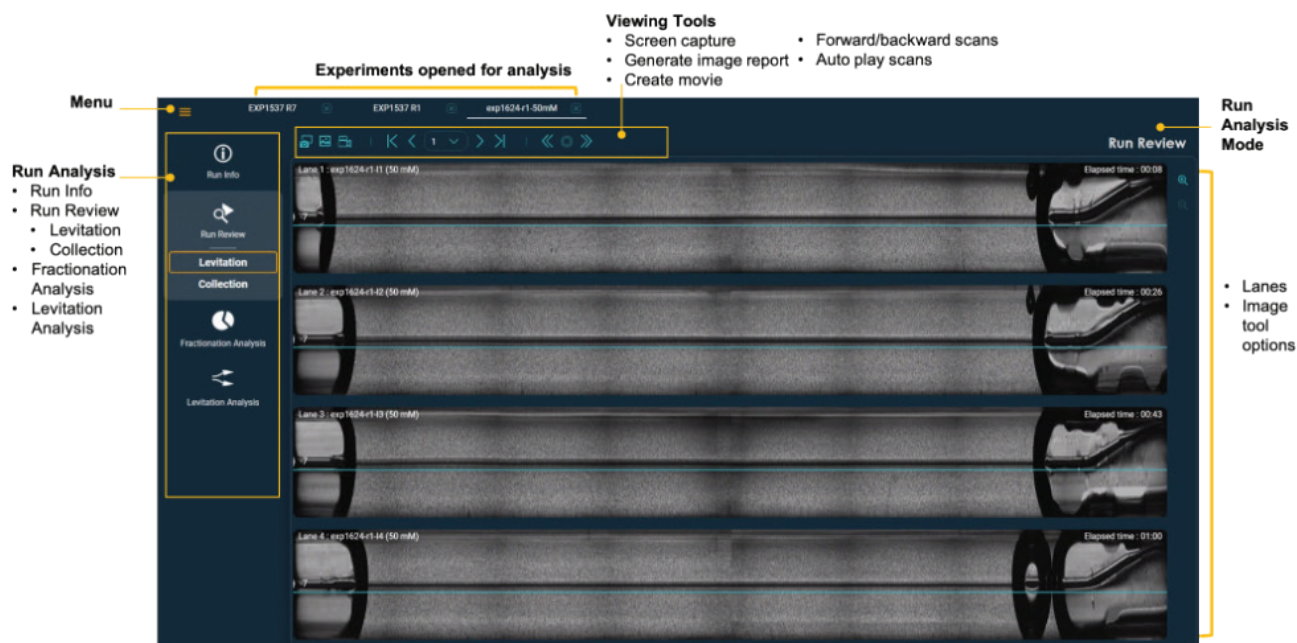


Figure 2. Software tools overview

At the end of an experiment run on the LeviCell EOS, the EOS Manager software automatically generates several data files in the run folder. LeviMetrics uses the Run.exp file to enable viewing and analysis of experimental data. For details on running experiments and the data folder structure, refer to the LeviCell EOS User Guide.



NOTE: Copy data to the local PC running LeviMetrics before analysis. Performing LeviMetrics analysis over the network is not advisable, as this can drastically slow down analysis or software performance.

Up to three experiment run files can be opened simultaneously. Each file is displayed in its own tab, arranged across the top of the screen (Figure 3).

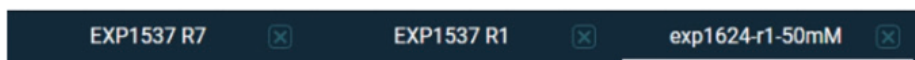


Figure 3. Open runs

If you attempt to open a fourth experiment run, a dialog box will appear (figure 3). You can choose to:

- Manually close one of the currently open runs before proceeding, or
- Allow the software to close all open runs and continue with the new one.

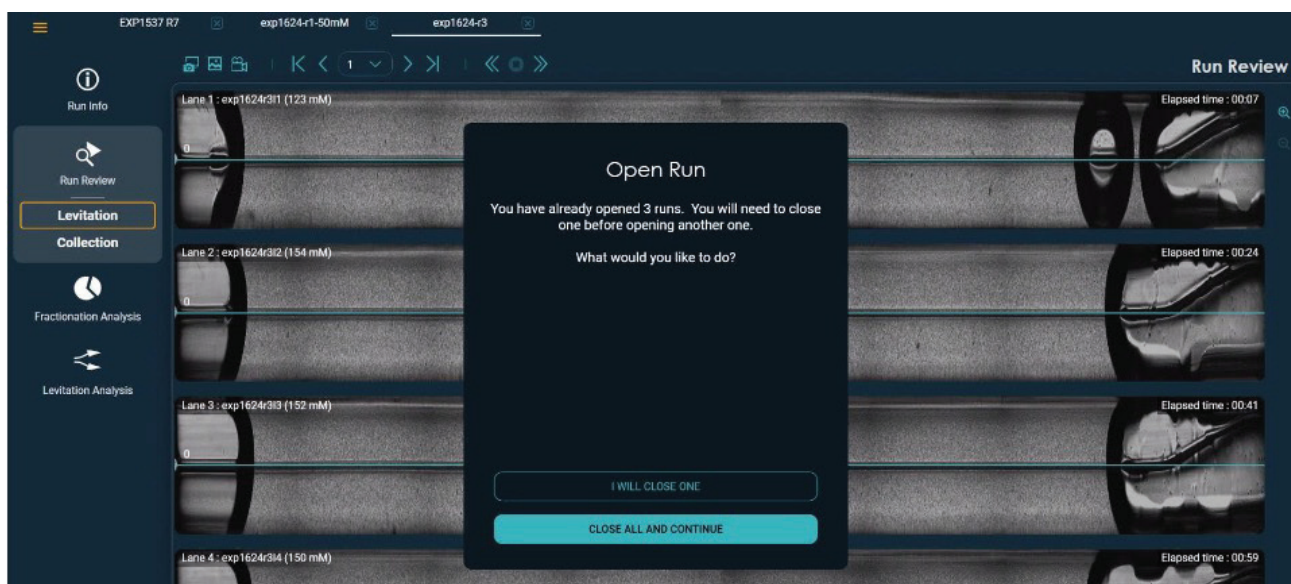


Figure 4. Dialog message if opening more than three runs

Multiple Instances

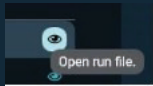
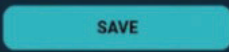
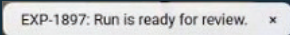
LeviMetrics supports running multiple instances to enable side-by-side comparisons across multiple monitors (for example, one instance per monitor). Each additional instance allows you to open up to three more experiment run files.



NOTE: Opening more than 3 runs with multiple LeviMetrics instances can cause computer slowdown or performance issues depending on the computer specification.

General Navigation

The LeviMetrics software uses several colors for navigation and button usage.

Item	Action	Result
Button	Hover	 Tooltip will appear*
Default Button	Click	 Button function
Non Default Button	Click	 Button function
Field	Click	 Field become editable
Active tool	Click	 Turns on and off tool
Active run	Selected	 Run will be viewed
Selected mode	Click	 Mode viewed or analyzed on the main viewing window
Temporary message	Clear	 Temporary messages can be cleared manually, but they will also disappear automatically after a short time.

* Tooltip will appear for some functions only

Table 1. Navigation overview

Menu

In the upper-left corner, expand the menu to access:

- Open file
- Close file
- Close all files
- Recent Runs
- LeviMetrics Elite License
- About LeviMetrics
- Exit

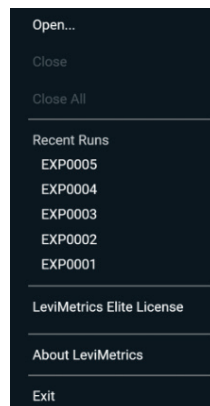


Figure 5. Expanded Menu options

The About LeviMetrics displays the LeviMetrics software version and build number and the End User Software License Agreement.

If the LeviMetrics Elite upgrade package subscription has been activated, the About LeviMetrics details will show the Elite version.

Analysis Modes Summary

There are four Analysis Modes available for each run. Each mode provides additional analysis options.



NOTE: Fractionation Analysis and Levitation Analysis are not available for non-cell-based protocols. Nuclei sample runs, Core Calibration or System Check runs cannot be analyzed.

Analysis Icon	Analysis Mode	Analysis Options	Description
 Run Info	Run Info	n/a	- View all entered run info. - Levitation Agent and Notes fields can be edited in case of incorrect or missing info. The software will require a name to be entered in the “Updated by” field.
 Run Review	Run Review	Levitation	- View samples during levitation and all completed scans - Zoom into each lane - Create video of levitation - Take screen captures - Generate image view report
		Collection	- View samples during collection - Zoom into each lane - Create video of sample flow during collection - Take screen captures - Generate image view report
 Fractionation Analysis	Fractionation Analysis		- Analyze Relative Intensity % for top and bottom fractions for all lanes or individual lanes - View alternative split lines and the corresponding changes in fractionation value or separation factor.
 Levitation Analysis	Levitation Analysis		Simulate alternate Levitation Agent concentrations and effects on sample levitation
Included With LeviMetrics Elite Upgrade			
 Profile Analysis	Profile Analysis		- Ability to analyze relative intensity of fluorescent stains - View the peak position and spread of the intensity curves relative to top and bottom fractions - Spectral crosstalk correction.

Table 2. Analysis Modes summary

GETTING STARTED

1. Double click the LeviMetrics software icon on the desktop
2. The LeviMetrics start screen will appear (Figure 6).
3. To access a run, click on the Open Run button.

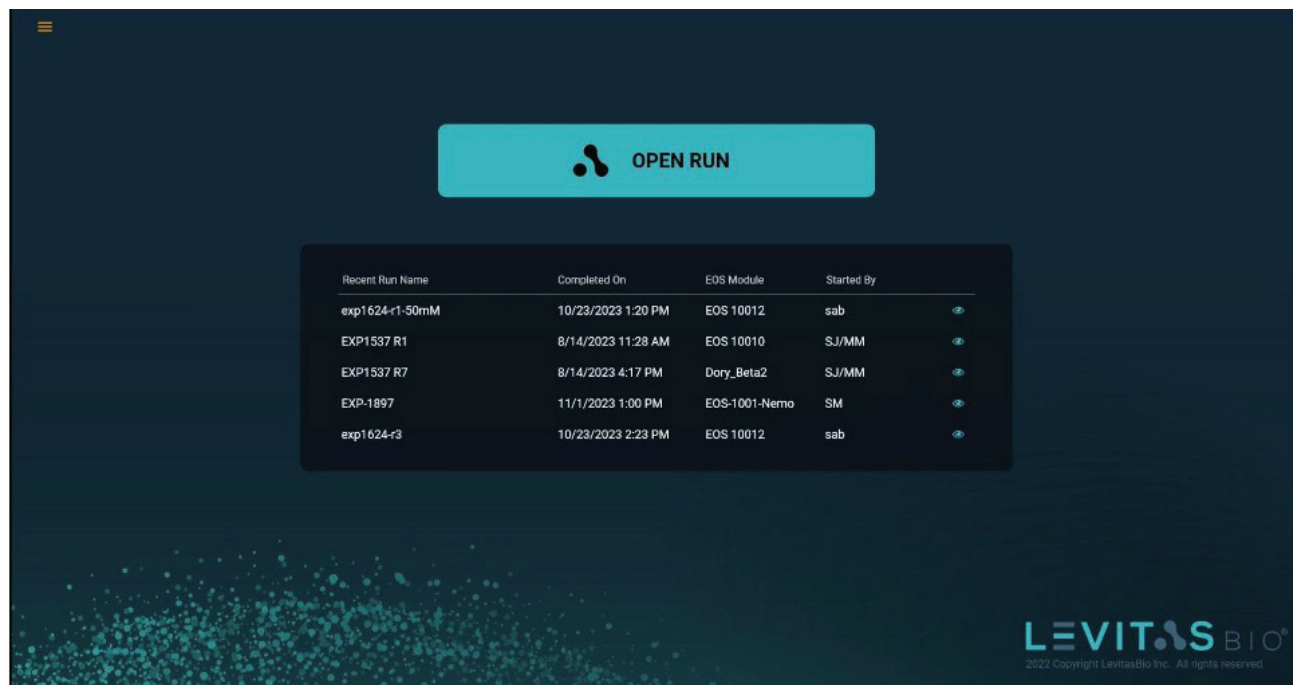


Figure 6. Home view

4. Alternatively, you may open one of the five most recent experiments. The opened run history will appear below the Open Run button. To open a run from this list, hover over the file and click the icon  on the right (Figure 7).

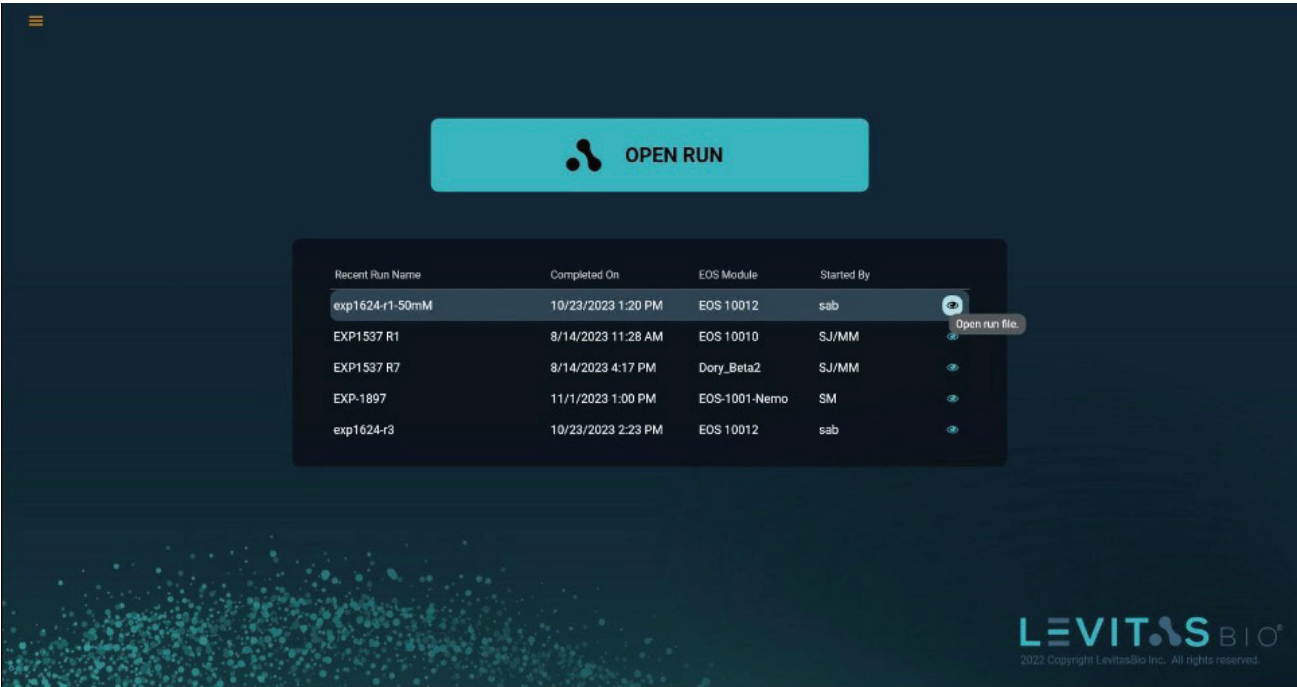


Figure 7. Open recent run

When a run is opened, the software loads the run information, images, and any previously analyzed results. This process may take a few minutes. A progress circle will display the percentage of completion (Figure 8).

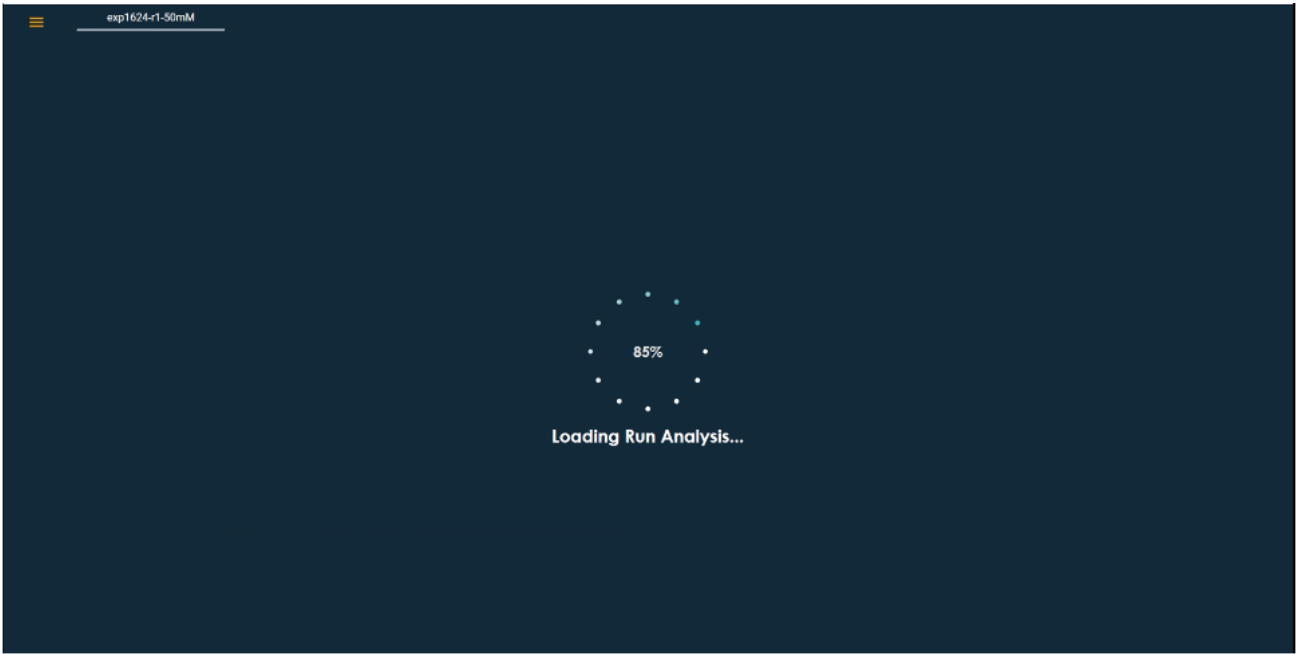


Figure 8. Progress indicator while loading file.

Once the file has finished loading, the Main Analysis screen will open in the default Run Review Analysis Mode - Levitation Review (Figure 9). If fluorescence fluorescence images will also be displayed.

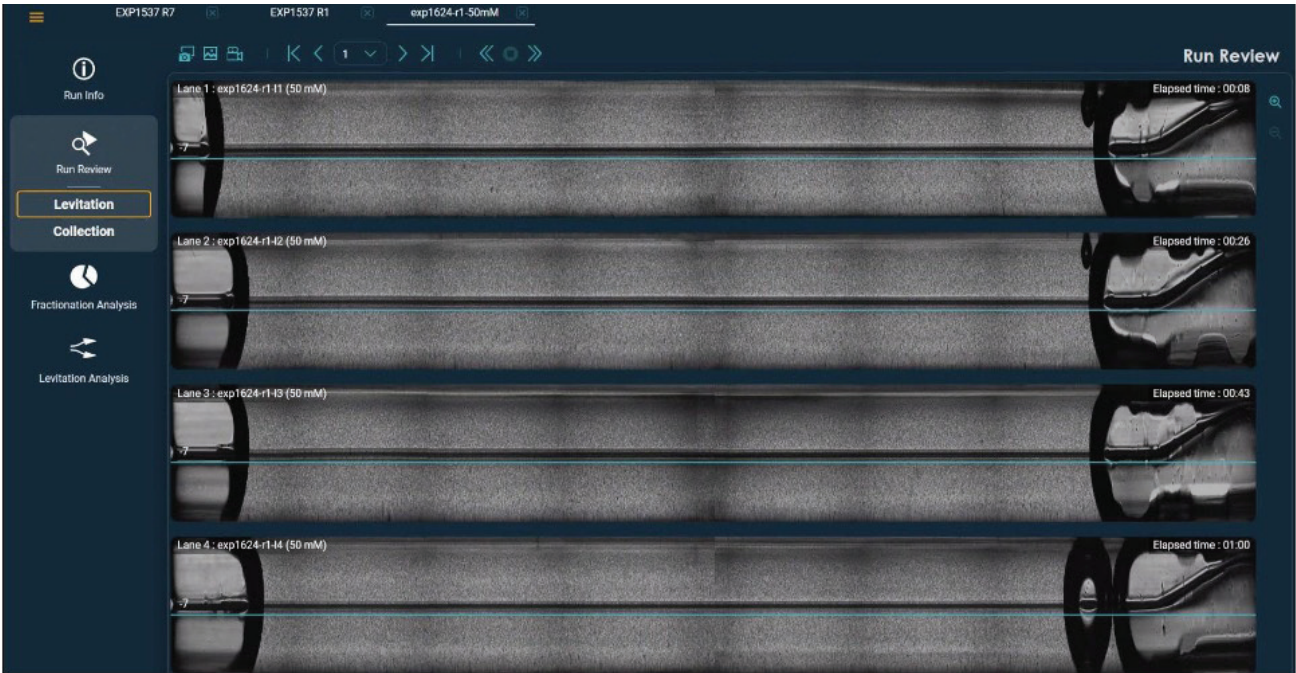


Figure 9. Run Review Levitation view

To open additional files for parallel analysis, click on the Menu icon on the upper left, and choose Open. The menu will also display up to 5 of the most recent runs. (Figure 10).

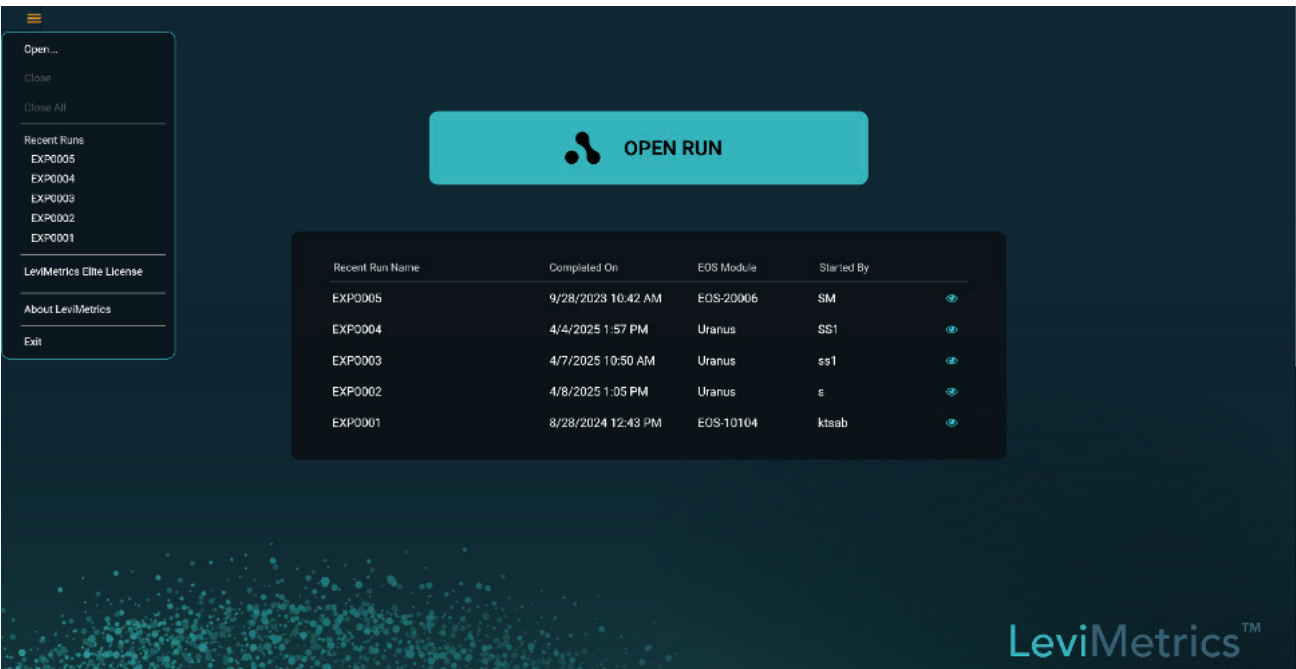


Figure 10. Progress indicator while loading file.

RUN ANALYSIS MODES

Run Information

This is the experiment information entered at the time of the run on the LeviCell EOS. Information included are:

- Run Name
- Cartridge barcode
- Protocol
- Levitation (Actual/Design)
- Run Temperature / EOS Module
- Started by [User]
- Completed on [Date, Time]
- All lanes used
- Sample names entered
- Levitation Agent (mM)
- Green fluorescence selected
- Red fluorescence selected
- Notes

By default, Run Info is displayed in view-only mode. Most of the information entered at the time of the experiment is static and cannot be modified. The only editable fields are:

- Levitation Agent (mM) concentration
- Notes



Figure 11. Run Info Edit icon.

To enable editing, click the Edit icon on the toolbar (figure 11).

When changes are made:

- The software requires the **“Updated By”** field to be filled in to ensure proper tracking of modifications.
- If the **Levitation Agent concentration** is altered, previously analyzed results may need to be recalculated.

EXP1537 R7

EXP1537 R1

exp1624-r1-50mM

Run Info

Run Review

Fractionation Analysis

Levitation Analysis

Run name

exp1624-r1-50mM

Cartridge barcode

012-1137-0158

Protocol

Medium Cell (5 - 20µm)

Levitation (Actual / Design)

20 min / 20 min

Run temperature / EOS Module

Ambient / EOS 10012

Started by

sab

Completed on

10/23/2023 1:20 PM

Sample name

Lane 1 exp1624-r1-i1

LA (mM)

50

Green fluorescence

None

Red fluorescence

None

Lane 2 exp1624-r1-i2

50

None

None

Lane 3 exp1624-r1-i3

50

None

None

Lane 4 exp1624-r1-i4

50

None

None

Notes

Updated by

CANCEL

SAVE

Figure 12. Edit mode

exp1624-r3

EXP1537 R7

Run Info

Run Review

Fractionation Analysis

Levitation Analysis

Run name

EXP1537 R7

Cartridge barcode

013-1121-0096

Protocol

Medium Cell (5 - 20µm)

Levitation (Actual / Design)

20 min / 20 min

Run temperature / EOS Module

Ambient / Dory_Beta2

Started by

SJ/MM

Completed on

8/14/2023 4:17 PM

Updated by

ij

Updated on

11/27/2023 10:58 AM

Sample name

Lane 1

LA (mM)

Green fluorescence

Calcein AM

Red fluorescence

Propidium Iodide

Lane 2

Calcein AM

Propidium Iodide

Lane 3

Fast Green

Fast Red

Lane 4

Fast Green

Fast Red

Notes

LA value

Updated by

SM

CANCEL

SAVE

Save Run Info

Are you sure you want to update the run information and remove the analysis results?

NO

YES

Figure 13. Save Run Info

If the Run Info is updated and saved, the record will also include:

- Updated By: [Person's Name]
- Updated On: [Date, Time]

Run Review

The Run Review analysis mode is the default view when a file is opened. In this mode, there are two options:

- Levitation review and
- Collection review.

Once the run is loaded a message will appear in the lower right corner stating that the file is ready for review.

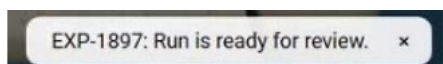


Figure 14. Message confirming run is ready for review

Levitation Review

The entire run and all completed scans can be reviewed in the Levitation Review mode as viewed during the experiment on the LeviCell EOS system.

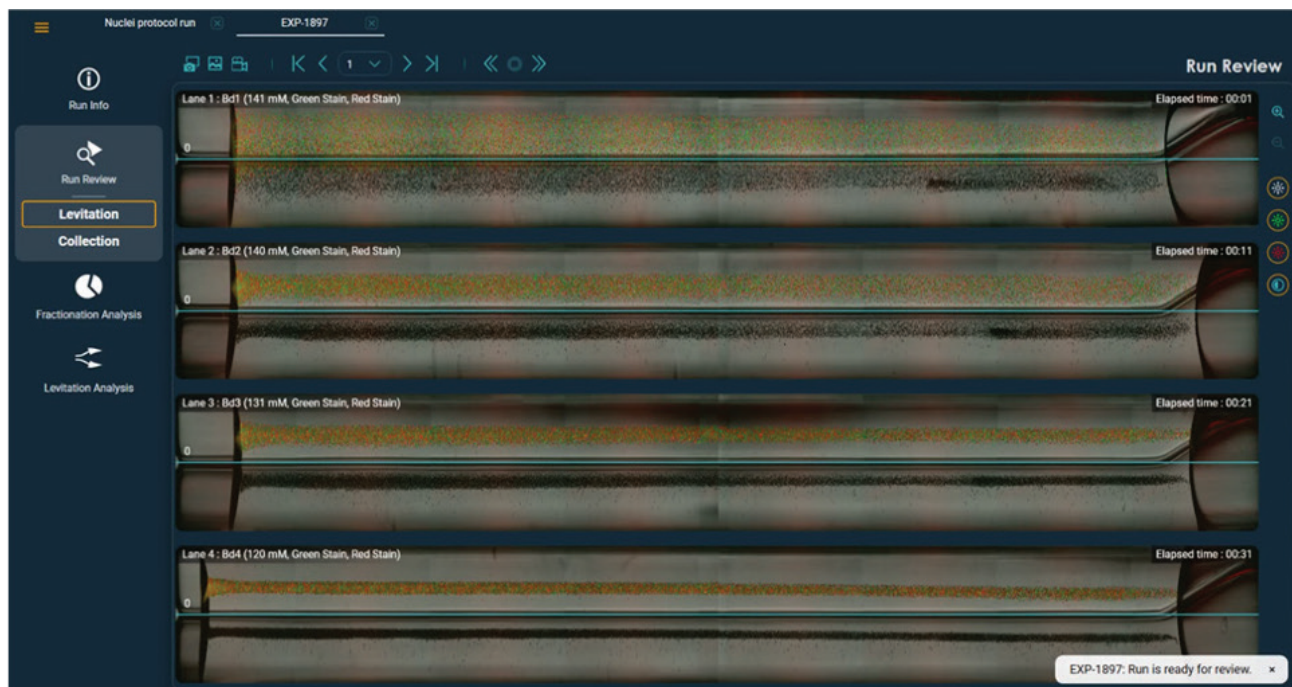


Figure 15. Experiment run loaded for Levitation Analysis

If the run included fluorescent stains, the fluorescence views will also be available via the imaging toolbar on the right (Figure 16). These can be toggled on and off for different views.

Imaging tools include:

- Zoom in
- Zoom out
- Brightfield
- Green fluorescence
- Red fluorescence
- Auto-contrast

These imaging tools are available in Run Review mode only.

If the max zoom level is used, a mini map will appear on the upper right-hand corner displaying which lane and position the view is showing. Use this mini map to jump to other positions within the view. This can be done by clicking on the mini map itself or using the scroll bars. When navigating with the arrow keys, unused lanes are skipped automatically.

If the Auto-contrast icon is selected, the contrast will be calculated based on the entire image set for the selected review mode. Otherwise, the contrast is set based on individual images.

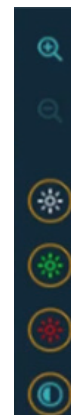


Figure 16. Imaging toolbar



Figure 17. Zoom view

There are a range of viewing tools available in the Run Review mode

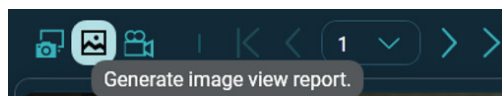


Figure 18. Generate image review report

Clicking the Screen Capture icon saves the current scan view of all lanes as a .png file in the run folder. Using the Image Report function generates a .pdf report of the current scan view. This differs from the standard run report, which captures the last scan.

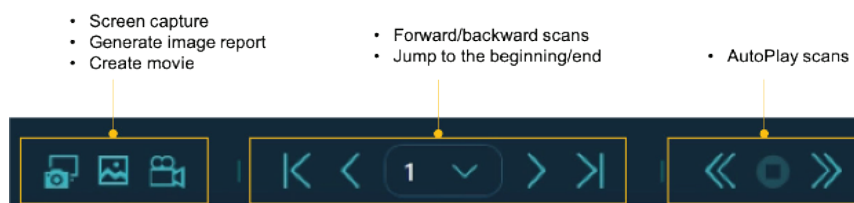


Figure 19. Viewing toolbar

The create movie icon will generate an mp4 file of the completed scan images during Levitation or Collection, depending on which view is open when selected.

To view different completed scans, use the view tools at the top of the run review. These buttons let you step slowly through the different scans or skip to the last scan. In the center of the buttons there is a pulldown menu which allows selection of specific completed scans. The elapsed timestamp is shown for each completed scan.

There is also an option to play the completed scans as a continuous video. Use the stop button to stop the video playback.

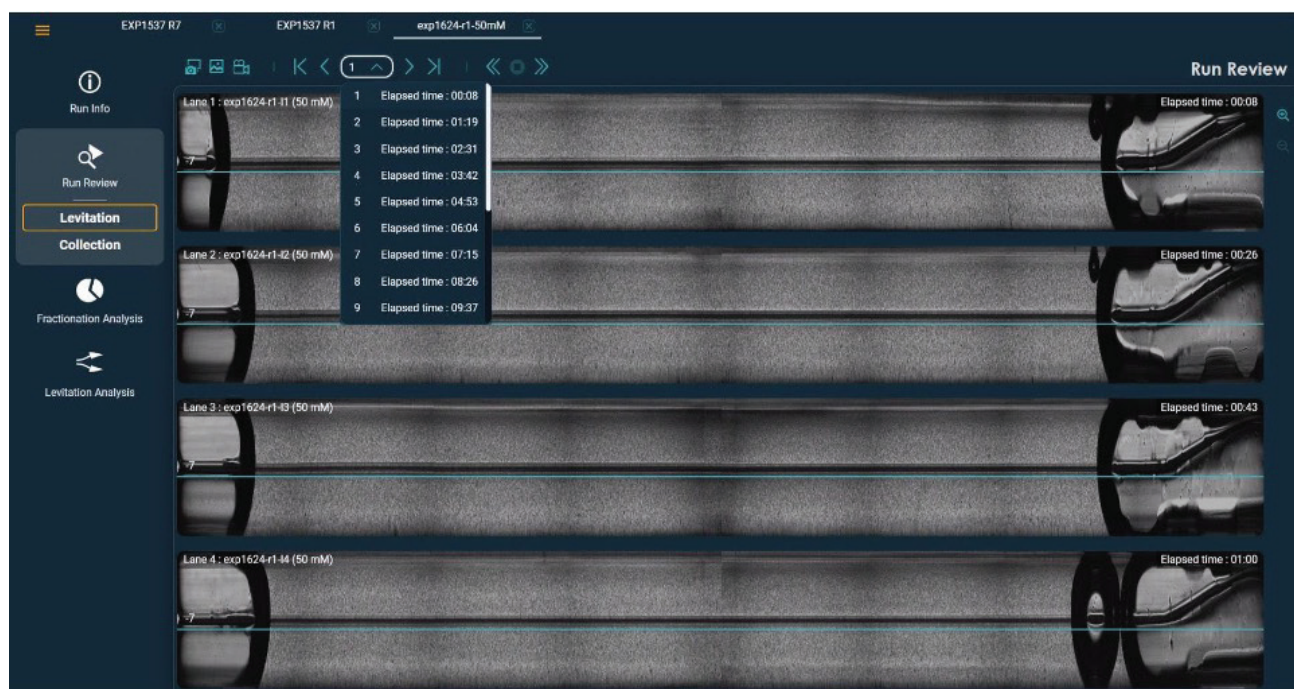


Figure 20. Drop down menu of completed scans

Collection Review

At the end of a run, samples are collected into the outlet wells one at a time. Since there is only one camera on the LeviCell EOS, it captures each lane one at a time as the sample flows by. In “Collection Review”, all four sample collections can be viewed simultaneously. (Figure 21). However, if “Parallel Collection” was selected for the sample collections, only one lane is displayed.

The default collection view displays as the original size of the collection capture, with the camera positioned at the splitter (output) end of the separation channel.

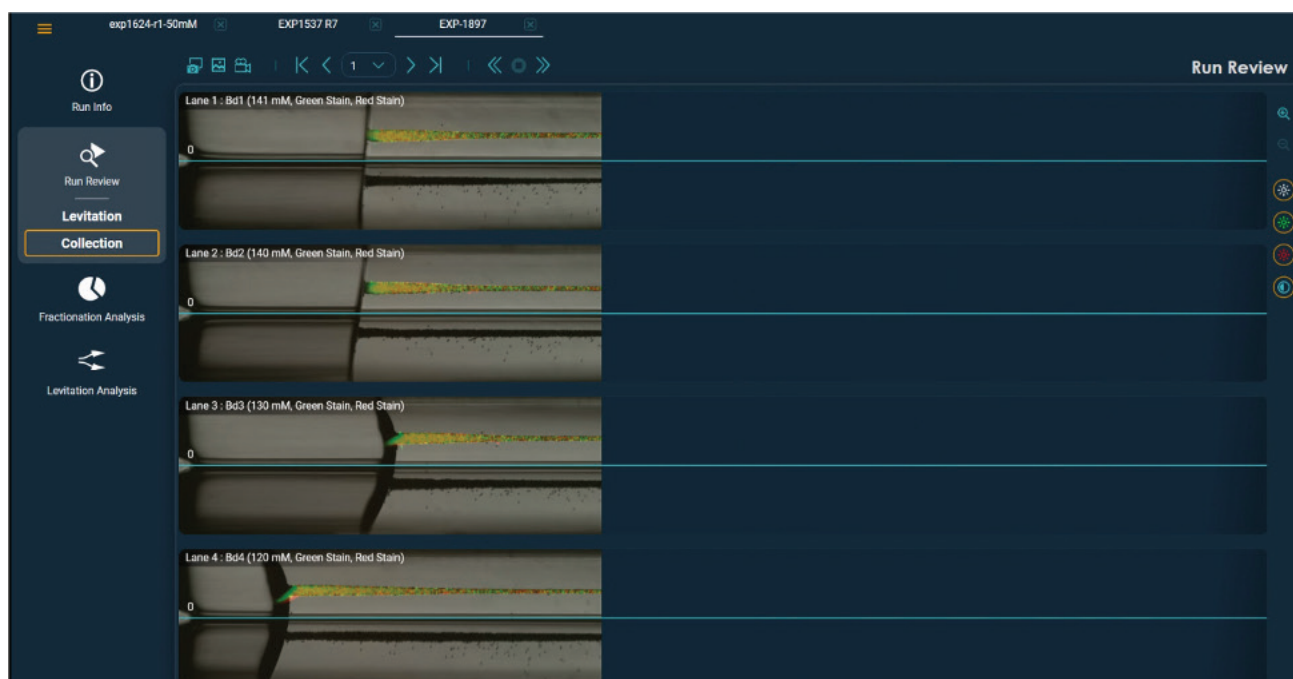


Figure 21. Collection Review

There are two levels of zoom that can be used: original size of the collection capture or Max Zoom level (Figure 22). The mini map will appear with the Max Zoom level. The user can scroll across the default collection view or between lanes in this view.



Figure 22. Max Zoom view in Collection Review

Fractionation Analysis

LeviMetrics can analyze a run to generate quantitative measurements that are useful prior to downstream analysis. In Fractionation Analysis mode, the software estimates the proportion of cells that levitate higher versus lower in the separation channel. This is determined by evaluating pixel intensities above and below a user-defined split line value.



NOTE: Fractionation Analysis tools are not available for non-cell-based protocols. Nuclei sample runs, Core Calibration or System Checks runs cannot be analyzed.

Upon clicking on the Fractionation Analysis Mode, the software will perform analysis on the loaded run. An indicator will show its progress (Figure 23).

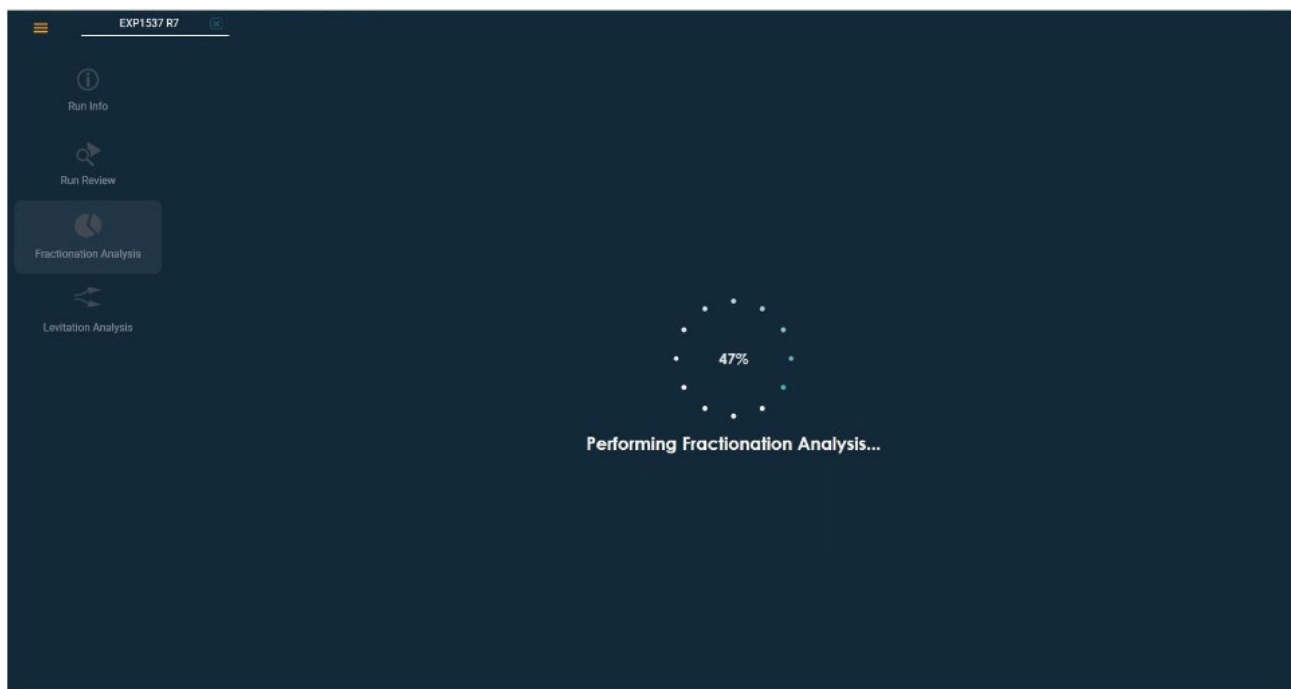


Figure 23. In progress Fractionation Analysis

All Lanes Analysis

Once the analysis is complete, the results will be displayed on the screen. A notification will also appear in the bottom-right corner, indicating that the fractionation analysis results are ready for review. In this mode all lane fractionation data can be displayed, or individual lanes can be viewed and analyzed individually (Figure 24).

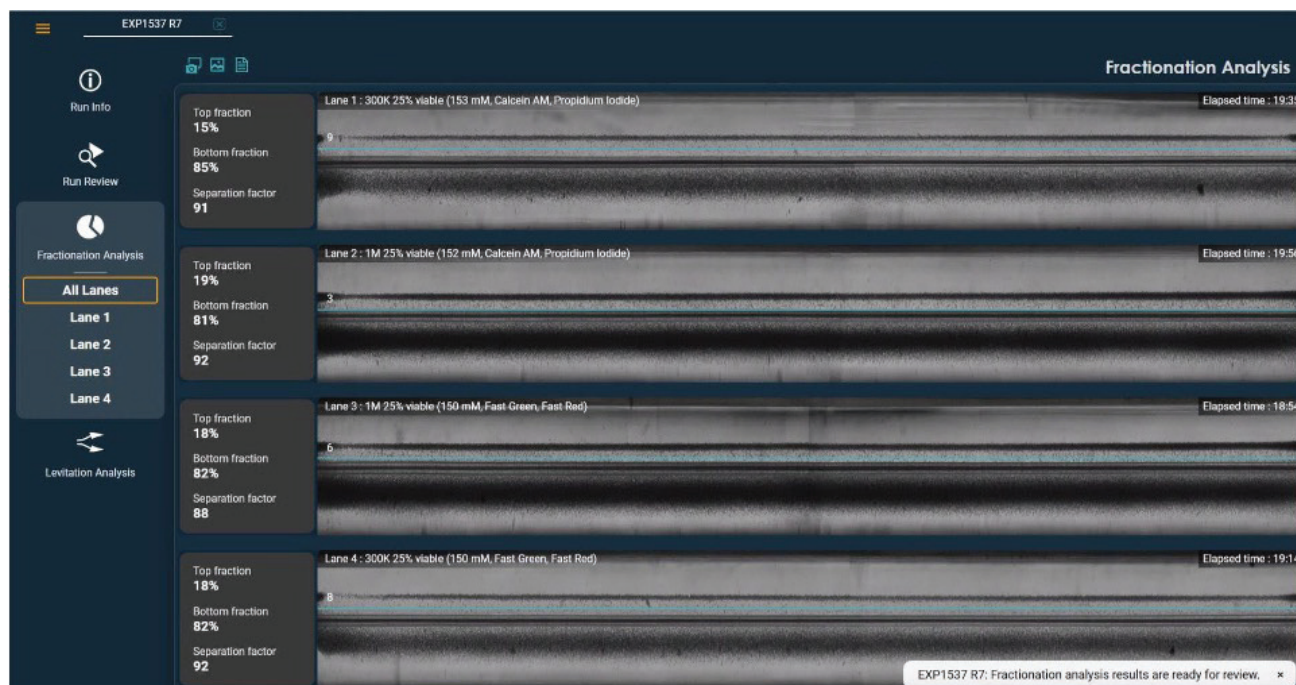


Figure 24. Fractionation Analysis all lanes view

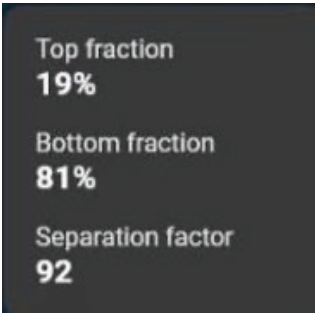
When all lanes are displayed, the following metrics appear on the left side of each lane:

- Top Fraction Percentage
- Bottom Fraction Percentage
- Separation Factor

These fractionation percentages correspond directly to the displayed image. They represent the relative intensity fractions of the sample, calculated based on the user-defined split line value.

The Separation Factor is a calculated metric that reflects the distance between sample populations above and below the split line, as well as their spread.

- A higher value indicates stronger separation and reduced risk of cross-collection error.
- A lower value suggests the top and bottom bands are close enough that crossover contamination may occur during collection.



The Separation Factor ranges from 0 to 100.

Figure 25. Fractionation information

Individual Lane Analysis

If an individual lane is selected, additional information will be displayed (Figure 26). The sample for the single lane selected will be displayed in a zoomed view. A Relative Intensity Graph is overlaid on the image to provide a histogram view of the relative intensity of the bands in the image.

The top and bottom fraction % is extrapolated across various split line values. The actual split line used during the run remains displayed in teal text. Another split line value can be selected and is indicated by the gold outline and gold split line on the image.

The Separation factor is also displayed for each split line value.

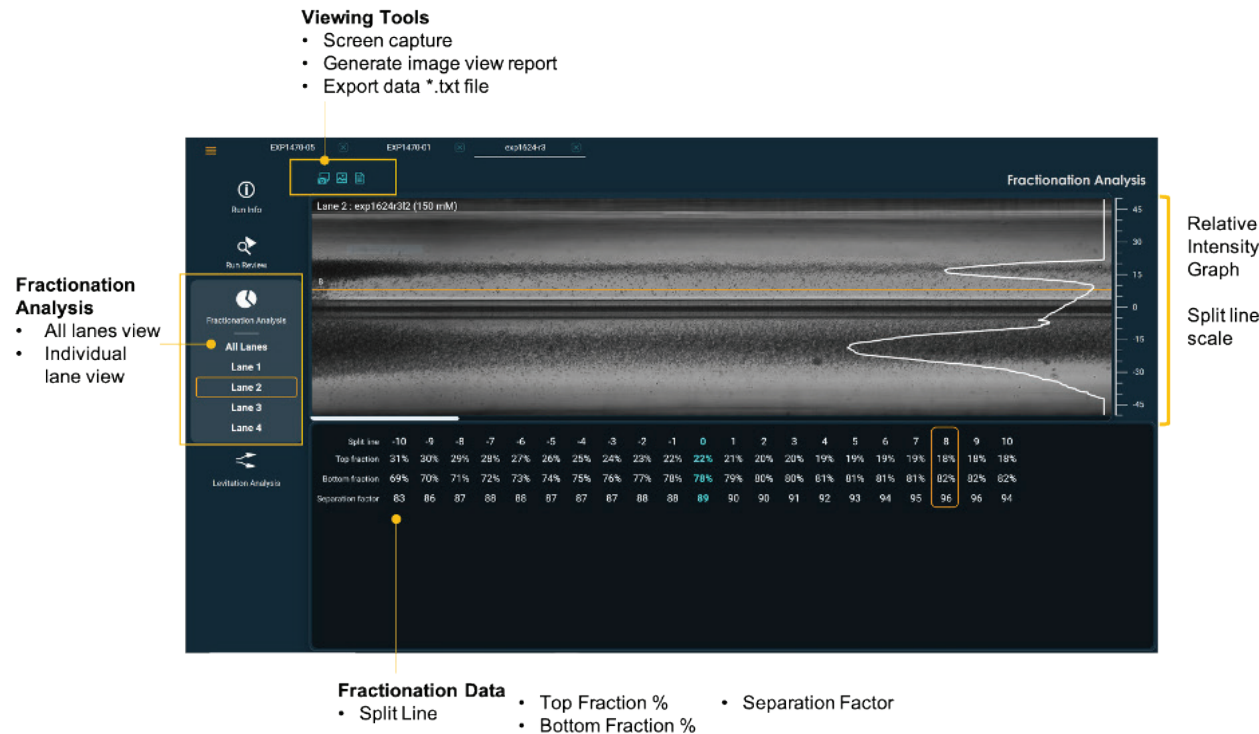


Figure 26. Fractionation Analysis tools overview

You can select different split line values to see how the split line shifts in relation to the Relative Intensity Graph. By adjusting the split line (+/- 10 values, with limits of -15 to 15), LeviMetrics simulates updated values for the fractions and Separation Factor. This allows you to evaluate how changes to the split line affect overall separation performance.

If another lane is selected, all relevant data will be updated to the new lane's information. The actual run's Split Line value will remain in teal.

At the top of the Fractionation Analysis mode there are different viewing tools that can be used: screen capture, Fractionation Analysis view report generation, and export of the fractionation data (Figure 27).

Exported fractionation data is saved as a .txt file and includes the fraction percentages for both top and bottom fractions, split line and Separation factor for each lane. This file is useful for plotting profiles or comparing multiple datasets (Figure 28).



NOTE: When an individual lane is selected, the exported data file also includes the intensity profile.

LEVITAS BIO®

Fractionation Analysis

Run Summary

Run name
EXP1537 R7

Cartridge barcode
013-1121-0096

Protocol
Medium Cell (5 - 20µm)

Levitation (Actual / Design)
20 min / 20 min

Run temperature / EOS Module
Ambient / Dory_Beta2

Started by
SJ/MM

Completed on
8/14/2023 4:17 PM

Updated by
SM

Updated on
11/29/2023 12:18 PM

Notes
LA value for Lane 1 updated to
153



Figure 27. Fractionation Analysis Report

The Fractionation Analysis report PDF can be generated for all lanes or just the individual lanes based on which view is being used at the time.

```

File Edit Format View Help
Run Info
Run name      EXP1537 R7
Cartridge barcode 013-1121-0096
Protocol      Medium Cell (5 - 20µm)
Levitation (Actual / Design) 20 min / 20 min
Run temperature / EOS Module Ambient / Dory_Beta2
Started by    SJ/MM
Completed on   8/14/2023 4:17 PM
Updated by     SM
Updated on    11/29/2023 12:18 PM
Notes LA value for Lane 1 updated to 153.

Fractionation Data
Lane 1
Sample name    300K 25% viable
Agent concentration (mM) 153
Split line     9
Top fraction   15%
Bottom fraction 85%
Separation factor 91
Lane 2
Sample name    1M 25% viable
Agent concentration (mM) 152
Split line     3
Top fraction   19%
Bottom fraction 81%
Separation factor 92
Lane 3
Sample name    1M 25% viable
Agent concentration (mM) 150
Split line     6
Top fraction   18%
Bottom fraction 82%
Separation factor 88
Lane 4
Sample name    300K 25% viable

```

Figure 28. Fractionation Analysis exported data file

Levitation Analysis

In Levitation Analysis mode, individual samples can be analyzed to aid in optimizing future similar sample runs. In this mode, LeviMetrics allows for dry optimization and simulation of samples based on changing Levitation Agent concentration. When the Levitation Agent concentration is changed, the image is altered to simulate how that sample will appear if run on the LeviCell EOS. In addition, the Relative Intensity curve is also modified. The user can use this analysis mode to understand the performance of levitation, see the change in band separation, widening of bands, how well the bands are distinguished, and how the Split Line value can be adjusted based on the Levitation Agent concentration.

The default view is on Lane 1 (or the first selected lane) and is split between two different views, however any of the lanes can be viewed. The left image displays the actual run as it was run on the LeviCell EOS. The right image displays the simulated condition. To change the Levitation Agent concentration, use the drop-down menu which includes steps of 10mM for +/- 50mM from the originally entered Levitation Agent concentration (capped at 50mM or 200mM).



NOTE: If LeviMetrics detects an issue with the analysis (e.g. meniscus is past the splitter) it will not display any analysis. A gray image will appear.

Use the drop down on the left side view to choose the available Collection Scan frame (Figure 29).

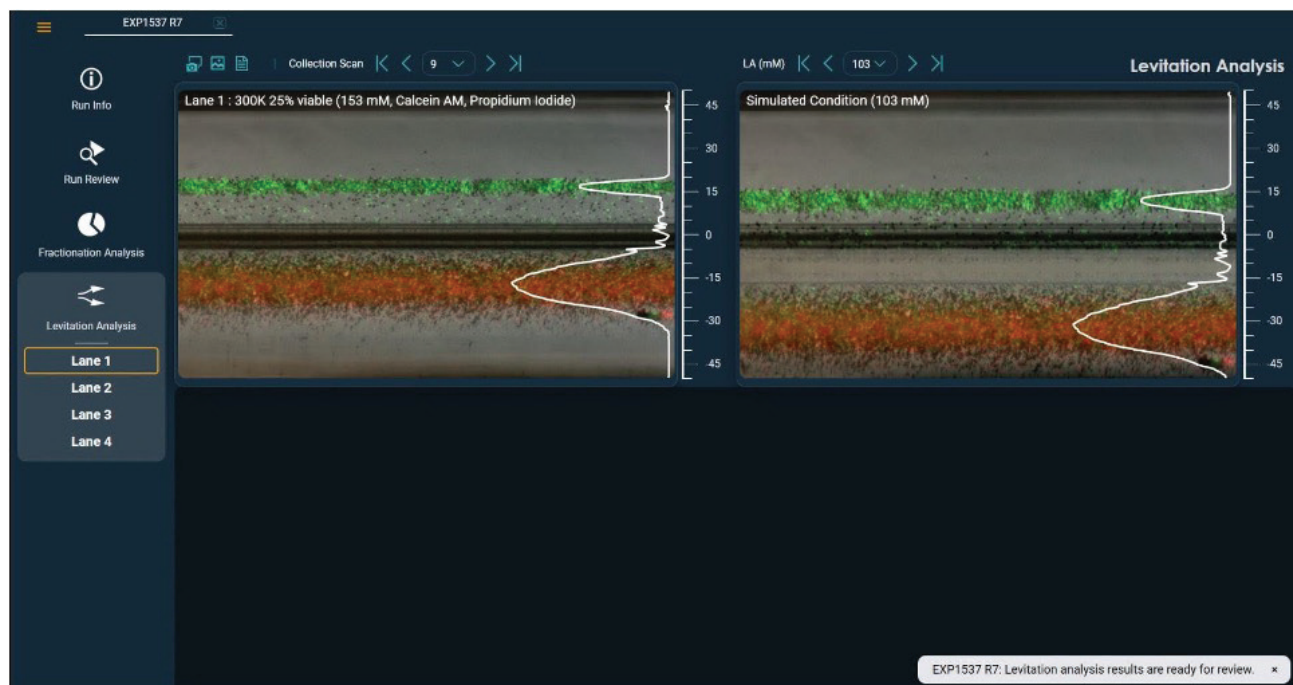


Figure 29. Levitation Analysis view

If the Levitation Agent concentration is outside of normal range (50-200mM) then an alert will appear (Figure 30).

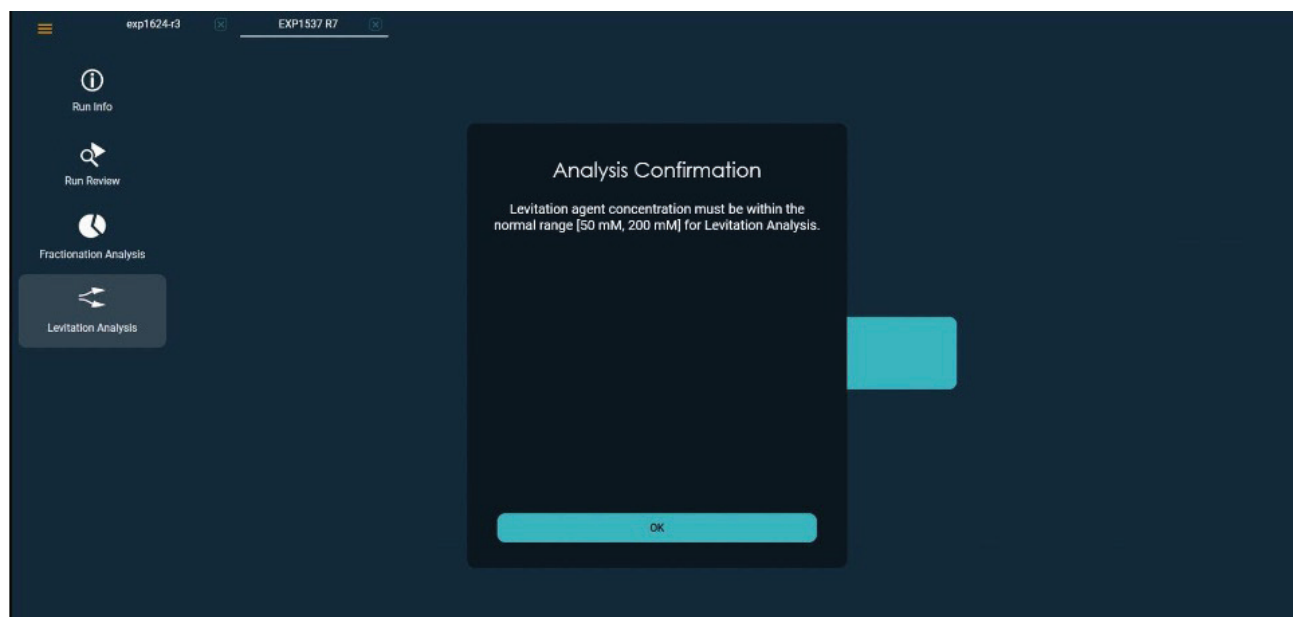


Figure 30. Levitation Analysis dialog message

A Levitation Analysis Report or exported data can be generated using the viewing tools. The data will be exported as a .txt file and includes the intensity values which can be graphed in a third-party program (Figure 31). Alternatively, a Levitation Analysis Run summary PDF can be generated capturing the simulation changes (Figure 32).

EXP1537 R7_Levitation Analysis_Lane 1_300K 25% viable.txt - Notepad

File Edit Format View Help

Run Info

Run name EXP1537 R7

Cartridge barcode 013-1121-0096

Protocol Medium Cell (5 - 20µm)

Levitation (Actual / Design) 20 min / 20 min

Run temperature / EOS Module Ambient / Dory_Beta2

Started by SJ/MM

Completed on 8/14/2023 4:17 PM

Updated by SM

Updated on 11/29/2023 12:18 PM

Notes LA value for Lane 1 updated to 153.

Levitation Data

Lane 1

Sample name 300K 25% viable

Collection Scan 9

Agent concentration (mM) 153

Agent concentration (mM) (Simulated) 103

Channel position	-50.000	-49.827	-49.653	-49.480	-49.307	-49.133	-48.960	-48.787	-48.614	-48.440	-48.267	-48.094	-47.920	-47.747	-47.574	-47.400	-47.227	-47.054
-28.163	-27.990	-27.816	-27.643	-27.470	-27.296	-27.123	-26.950	-26.776	-26.603	-26.430	-26.256	-26.083	-25.910	-25.737	-25.563	-25.390	-25.217	-25.043
-24.870	-24.697	-24.524	-24.351	-24.178	-24.004	-23.831	-23.658	-23.484	-23.311	-23.138	-22.964	-22.791	-22.617	-22.444	-22.270	-22.097	-21.924	-21.750
-21.577	-21.404	-21.230	-21.057	-20.884	-20.710	-20.537	-20.364	-20.190	-20.017	-19.844	-19.670	-19.497	-19.324	-19.150	-18.977	-18.804	-18.630	-18.457
-18.284	-18.110	-17.937	-17.764	-17.590	-17.417	-17.244	-17.070	-16.897	-16.724	-16.550	-16.377	-16.204	-16.030	-15.857	-15.684	-15.510	-15.337	-15.164
-14.990	-14.817	-14.644	-14.470	-14.297	-14.124	-13.950	-13.777	-13.604	-13.430	-13.257	-13.084	-12.910	-12.737	-12.563	-12.390	-12.217	-12.043	-11.870
-11.697	-11.524	-11.351	-11.178	-11.004	-10.831	-10.658	-10.484	-10.311	-10.138	-9.964	-9.791	-9.617	-9.444	-9.270	-9.097	-8.924	-8.750	-8.577
-8.404	-8.230	-8.057	-7.884	-7.710	-7.537	-7.364	-7.190	-7.017	-6.844	-6.670	-6.497	-6.324	-6.150	-5.977	-5.804	-5.630	-5.457	-5.284
-5.110	-4.937	-4.764	-4.590	-4.417	-4.244	-4.070	-3.897	-3.724	-3.550	-3.377	-3.204	-3.030	-2.857	-2.684	-2.510	-2.337	-2.164	-1.990
-1.817	-1.644	-1.470	-1.297	-1.124	-0.950	-0.777	-0.604	-0.430	-0.257	-0.084	0.090	0.264	0.437	0.610	0.784	0.957	1.130	1.304
1.477	1.650	1.824	2.000	2.173	2.347	2.520	2.694	2.867	3.040	3.214	3.387	3.560	3.734	3.907	4.080	4.254	4.427	4.600
4.773	4.946	5.119	5.293	5.466	5.639	5.812	5.986	6.159	6.332	6.505	6.678	6.851	7.024	7.197	7.370	7.543	7.717	7.890
8.063	8.236	8.409	8.582	8.755	8.928	9.101	9.274	9.447	9.620	9.793	9.966	10.139	10.312	10.485	10.658	10.831	11.004	11.177
11.350	11.523	11.696	11.869	12.042	12.215	12.388	12.561	12.734	12.907	13.080	13.253	13.426	13.599	13.772	13.945	14.118	14.291	14.464
14.637	14.810	14.983	15.156	15.329	15.502	15.675	15.848	16.021	16.194	16.367	16.540	16.713	16.886	17.059	17.232	17.405	17.578	17.751
17.924	18.097	18.270	18.443	18.616	18.789	18.962	19.135	19.308	19.481	19.654	19.827	20.000	20.173	20.346	20.519	20.692	20.865	21.038
21.211	21.384	21.557	21.730	21.903	22.076	22.249	22.422	22.595	22.768	22.941	23.114	23.287	23.460	23.633	23.806	23.979	24.152	24.325
24.498	24.671	24.844	25.017	25.190	25.363	25.536	25.709	25.882	26.055	26.228	26.401	26.574	26.747	26.920	27.093	27.266	27.439	27.612
27.785	27.958	28.131	28.304	28.477	28.650	28.823	28.996	29.169	29.342	29.515	29.688	29.861	30.034	30.207	30.380	30.553	30.726	30.899
31.072	31.245	31.418	31.591	31.764	31.937	32.110	32.283	32.456	32.629	32.802	32.975	33.148	33.321	33.494	33.667	33.840	34.013	34.186
34.359	34.532	34.705	34.878	35.051	35.224	35.397	35.570	35.743	35.916	36.089	36.262	36.435	36.608	36.781	36.954	37.127	37.300	37.473
37.646	37.819	37.992	38.165	38.338	38.511	38.684	38.857	39.030	39.203	39.376	39.549	39.722	39.895	40.068	40.241	40.414	40.587	40.760
40.933	41.106	41.279	41.452	41.625	41.798	41.971	42.144	42.317	42.490	42.663	42.836	43.009	43.182	43.355	43.528	43.701	43.874	44.047
44.220	44.393	44.566	44.739	44.912	45.085	45.258	45.431	45.604	45.777	45.950	46.123	46.296	46.469	46.642	46.815	46.988	47.161	47.334
47.507	47.680	47.853	48.026	48.199	48.372	48.545	48.718	48.891	49.064	49.237	49.410	49.583	49.756	49.929	50.102	50.275	50.448	50.621
50.794	50.967	51.140	51.313	51.486	51.659	51.832	52.005	52.178	52.351	52.524	52.697	52.870	53.043	53.216	53.389	53.562	53.735	53.908
54.081	54.254	54.427	54.600	54.773	54.946	55.119	55.292	55.465	55.638	55.811	55.984	56.157	56.330	56.503	56.676	56.849	57.022	57.195
57.368	57.541	57.714	57.887	58.060	58.233	58.406	58.579	58.752	58.925	59.098	59.271	59.444	59.617	59.790	59.963	60.136	60.309	60.482
60.655	60.828	61.001	61.174	61.347	61.520	61.693	61.866	62.039	62.212	62.385	62.558	62.731	62.904	63.077	63.250	63.423	63.596	63.769
63.942	64.115	64.288	64.461	64.634	64.807	64.980	65.153	65.326	65.499	65.672	65.845	66.018	66.191	66.364	66.537	66.710	66.883	67.056
67.229	67.402	67.575	67.748	67.921	68.094	68.267	68.440	68.613	68.786	68.959	69.132	69.305	69.478	69.651	69.824	69.997	70.170	70.343
70.516	70.689	70.862	71.035	71.208	71.381	71.554	71.727	71.900	72.073	72.246	72.419	72.592	72.765	72.938	73.111	73.284	73.457	73.630
73.803	73.976	74.149	74.322	74.495	74.668	74.841	75.014	75.187	75.360	75.533	75.706	75.879	76.052	76.225	76.398	76.571	76.744	76.917
77.090	77.263	77.436	77.609	77.782	77.955	78.128	78.301	78.474	78.647	78.820	78.993	79.166	79.339	79.512	79.685	79.858	80.031	80.204
80.377	80.550	80.723	80.896	81.069	81.242	81.415	81.588	81.761	81.934	82.107	82.280	82.453	82.626	82.799	82.972	83.145	83.318	83.491
83.664	83.837	84.010	84.183	84.356	84.529	84.702	84.875	85.048	85.221	85.394	85.567	85.740	85.913	86.086	86.259	86.432	86.605	86.778
86.951	87.124	87.297	87.470	87.643	87.816	87.989	88.162	88.335	88.508	88.681	88.854	89.027	89.200	89.373	89.546	89.719	89.892	90.065
90.238	90.411	90.584	90.757	90.930	91.103	91.276	91.449	91.622	91.795	91.968	92.141	92.314	92.487	92.660	92.833	93.006	93.179	93.352
93.525	93.698	93.871	94.044	94.217	94.390	94.563	94.736	94.909	95.082	95.255	95.428	95.601	95.774	95.947	96.120	96.293	96.466	96.639
96.812	96.985	97.158	97.331	97.504	97.677	97.850	98.023	98.196	98.369	98.542	98.715	98.888	99.061	99.234	99.407	99.580	99.753	99.926
100.099	100.272	100.445	100.618	100.791	100.964	101.137	101.310	101.483	101.656	101.829	102.002	102.175	102.348	102.521	102.694	102.867	103.040	103.213
103.386	103.559	103.732	103.905	104.078	104.251	104.424	104.597	104.770	104.943	105.116	105.289	105.462	105.635	105.808	105.981	106.154	106.327	106.500
106.673	106.846	107.019	107.192	107.365	107.538	107.711	107.884	108.057	108.230	108.403	108.576	108.749	108.922	109.095	109.268	109.441	109.614	109.787
109.960	110.133	110.306	110.479	110.652	110.825	110.998	111.171	111.344	111.517	111.690	111.863	112.036	112.209	112.382	112.555	112.728	112.901	113.074
113.247	113.420	113.593	113.766	113.939	114.112	114.285	114.458	114.631	114.804	114.977	115.150	115.323	115.496	115.669	115.842	116.015	116.188	116.361
116.534	116.707	116.880	117.053	117.226	117.399	117.572	117.745	117.918	118.091	118.264	118.437	118.610	118.783	118.956	119.129	119.302	119.475	119.648
119.821	120.000	120.179	120.358	120.537	120.716	120.895	121.074	121.253	121.432	121.611	121.790	121.969	122.148	122.327	122.506	122.685	122.864	123.043
123.222	123.401	123.580	123.759	123.938	124.117	124.296	124.475	124.654	124.833	125.012	125.191	125.370	125.549	125.728	125.907	126.086	126.265	126.444
126.623	126.802	126.981	127.160	127.339	127.518	127.697	127.876	128.055	128.234	128.413	128.592	128.771	128.950	129.129	129.308	129.487	129.666	129.845
129.964	130.143	130.322	130.501	130.680	130.859	131.038	131.217	131.396	131.575	131.754	131.933	132.112	132.291	132.470	132.649	132.828	133.007	133.186
133.365	133.544	133.723	133.902	134.081	134.260	134.439	134.618	134.797	134.976	135.155	135.334	135.513	135.692	135.871	136.050	136.229	136.408	136.587
136.766	136.945	137.124	137.303	137.482	137.661	137.840	138.019	138.198	138.377	138.556	138.735	138.914	139.093	139.272	139.451	139.630	139.809	139.988
140.167	140.346	140.525	140.704	140.883	141.062	141.241	141.420	141.599	141.778	141.957	142.136	142.315	142.494	142.673	142.852	143.031	143.210	143.389
143.568	143.747	143.926	144.105	144.284	144.463	144.642	144.821	145.000	145.179	145.358	145.537	145.716	145.895	146.074	146.253	146.432	146.611	146.790
146.969	147.148																	

LEVIMETRICS ELITE ANALYSIS MODES

The LeviMetrics Elite upgrade offers a suite of advanced powerful metrics and analysis packages. Additional powerful analysis modes will be offered regularly and will be part of all versions after LeviMetrics v3.0.

Elite License Activation

LeviMetrics uses software licensing technology to manage your entitlement to the Elite upgrade.

When you purchase the Elite upgrade, you will receive a delivery email containing a License Code in the format XXXX-XXXX-XXXX (alphanumeric). This License Code can be used to activate LeviMetrics Elite for up to five users.

Note: The Elite license is node-locked, meaning it is tied to a specific computer. Each computer requires its own activation.

The activation process consists of two steps, to be completed on each computer:

- 1. Generate a CID File and send it to the LevitasBio email address provided with your license code.
- 2. Activate the Elite license by entering the activation key you receive back from LevitasBio.

Generating a CID File

Launch LeviMetrics software and click the menu bar at the top-left of the application window, and then select LeviMetrics Elite License from the dropdown menu (Figure 33).

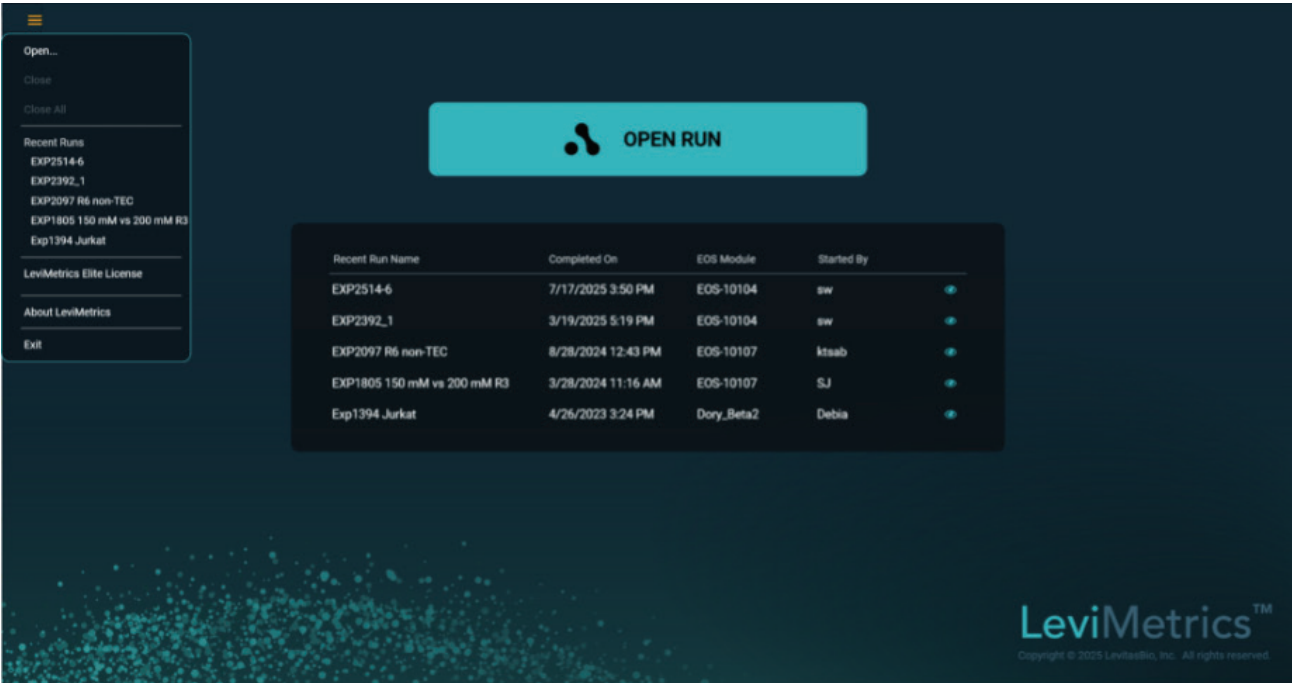


Figure 33. Profile Analysis view

Enter the License Code and click the GENERATE COMPUTER ID button to generate and save the computer ID file. After saving the file, send the file to the LevitasBio email address shared with the license code (Figure 34).

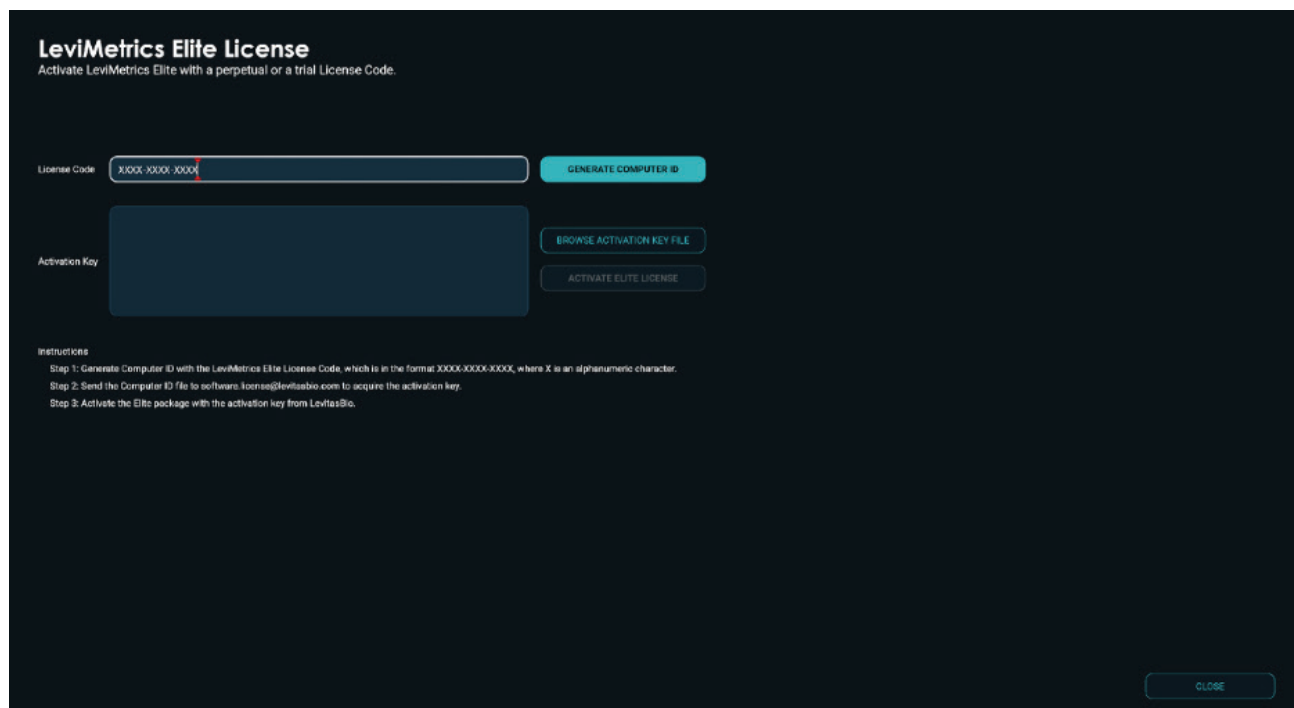


Figure 34. Generate Computer ID for the LeviMetrics Elite Licence

LevitasBio will send an activation key file after receiving the computer ID file. Download the file from your email, and then click the BROWSE ACTIVATION KEY FILE button to select and open it (Figure 35).

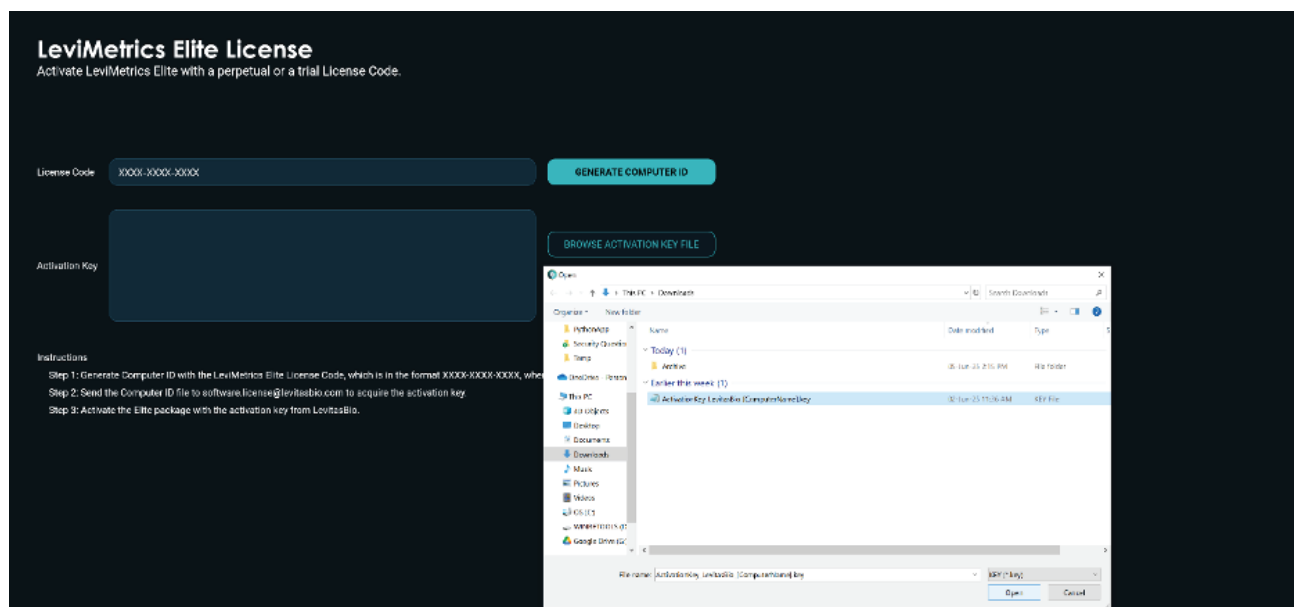
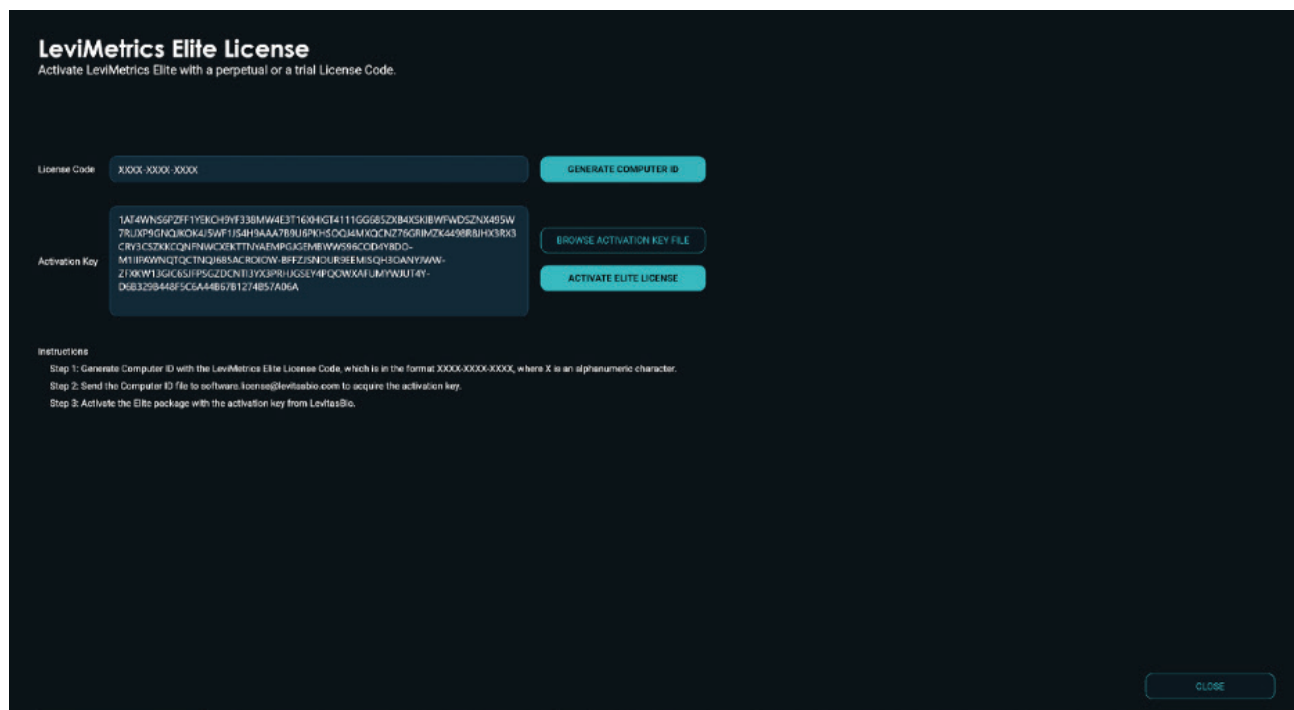


Figure 35. Open the activation key

After the key file is opened, click the ACTIVATE ELITE LICENSE button to activate the Elite upgrade. When you open the file it will automatically populate the Activation Key field with the key (Figure 36).



The image shows a dark-themed window titled "LeviMetrics Elite License" with the subtitle "Activate LeviMetrics Elite with a perpetual or a trial License Code." The window contains two main input sections: "License Code" with a text field containing "XXXX XXXX XXXX" and a "GENERATE COMPUTER ID" button; and "Activation Key" with a text field containing a long alphanumeric key and a "BROWSE ACTIVATION KEY FILE" button. Below these is an "ACTIVATE ELITE LICENSE" button. At the bottom right is a "CLOSE" button. A section titled "Instructions" provides three steps: 1. Generate Computer ID, 2. Send the Computer ID to software.license@levit.bio, and 3. Activate the Elite package.

LeviMetrics Elite License
Activate LeviMetrics Elite with a perpetual or a trial License Code.

License Code: GENERATE COMPUTER ID

Activation Key: BROWSE ACTIVATION KEY FILE

ACTIVATE ELITE LICENSE

Instructions
Step 1: Generate Computer ID with the LeviMetrics Elite License Code, which is in the format XXXX-XXXX-XXXX, where X is an alphanumeric character.
Step 2: Send the Computer ID file to software.license@levit.bio to acquire the activation key.
Step 3: Activate the Elite package with the activation key from LevitasBio.

CLOSE

Figure 36. Enter the activation key to activate the Elite License

The LeviMetrics Elite features are now enabled for the computer (Figure 37).

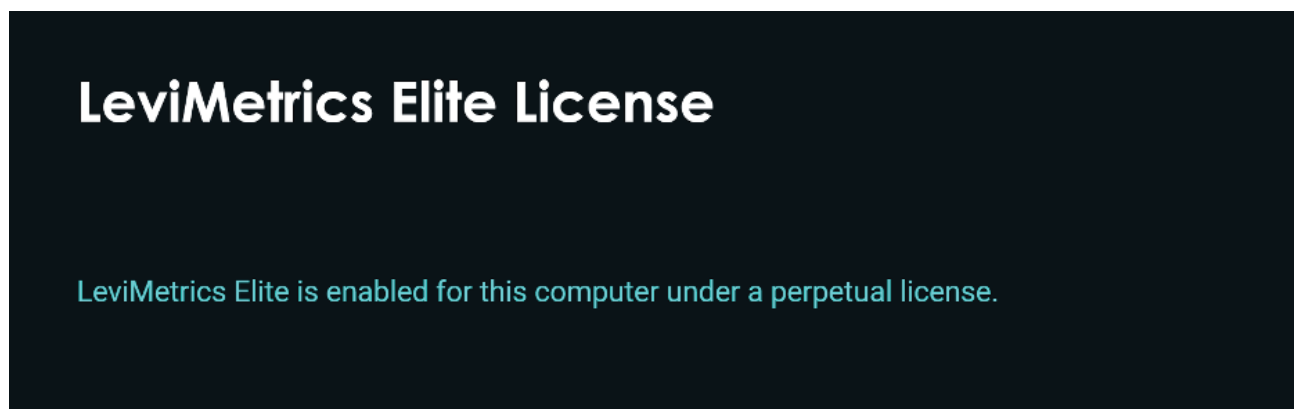


Figure 37. The Elite License is activated

Profile Analysis

In Profile Analysis mode, samples that are fluorescently stained can be analyzed for the amount of fluorescence signal visualized either in the top or bottom half of the separation channel (Figure 38).

The default lane is Lane 1 (or the first selected lane). The full length of the separation channel is displayed with the fluorescence signal only. The split line chosen is shown in the teal horizontal line. On the right, the two histograms represent the relative fluorescence intensity corresponding to the two stains.

The profile analysis results are displayed below the profile image, including:

- Stain name
- Split line value
- Top Fraction
- Bottom Fraction
- Top peak position
- Top peak width
- Bottom peak position
- Bottom peak width
- Crosstalk

The peak position indicates where in the image the signal is highest for each fluorescent stain. The peak width indicates how uniform the signal is for each stain. A smaller width corresponds to a tighter band of cells within the sample.

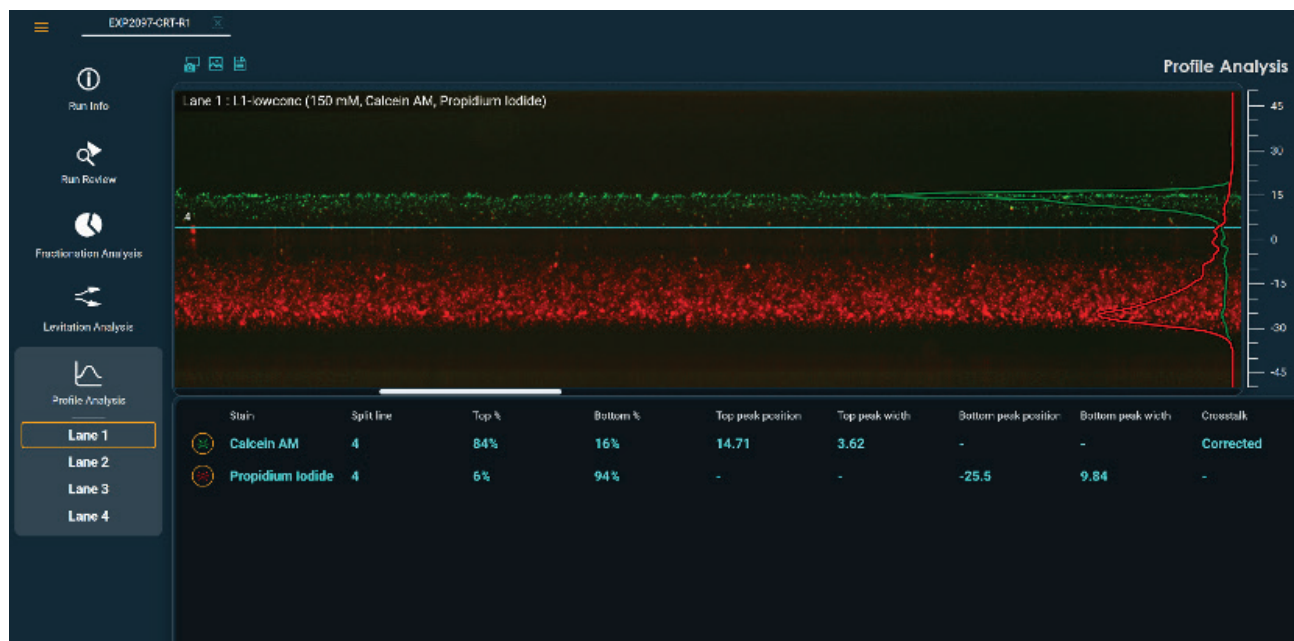


Figure 38. Profile Analysis view

If the run did not include a fluorescent stain, the Profile Analysis cannot be performed, and a notification will appear (Figure 39).

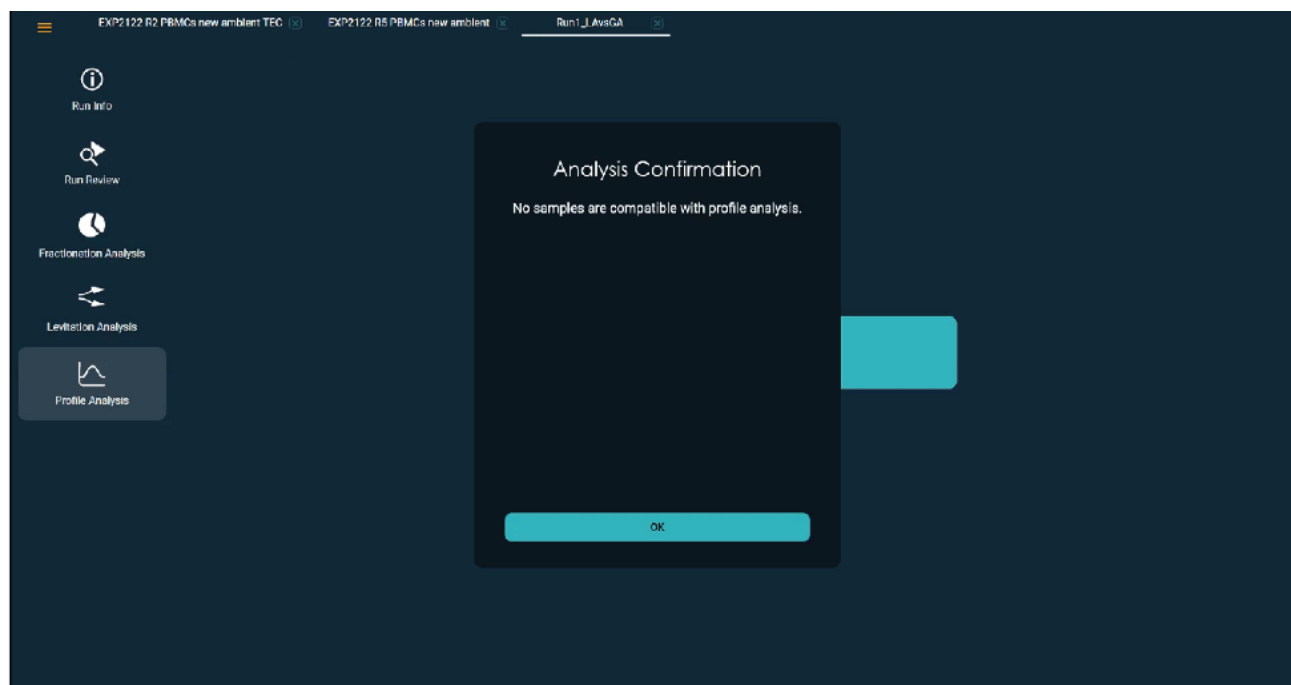


Figure 39. Notification if Profile Analysis cannot be performed

Use the Profile Analysis viewing tools above the image to select an export option for the analysis. The data may be exported as a txt file with intensity values which can be graphed in a third party program (Figure 40). Alternatively, a Profile Analysis Run Summary PDF can be generated (Figure 41).

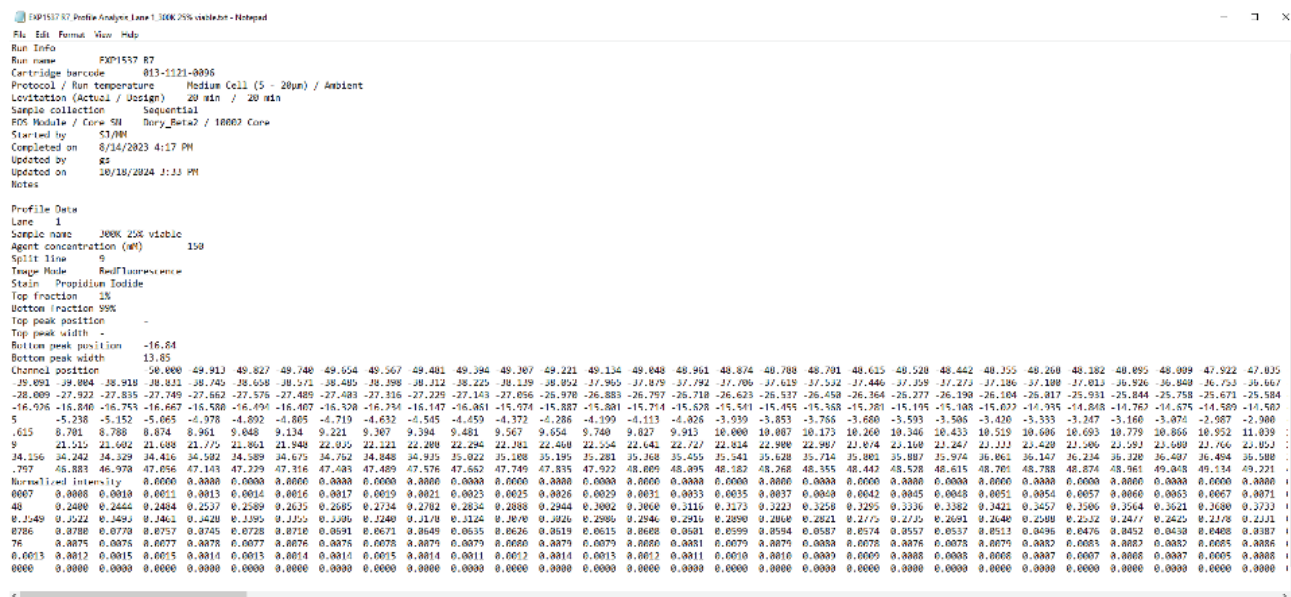


Figure 40. Profile Analysis Report

Run Summary

Run name
EXP2097-CRT-R1

Cartridge barcode
012-1145-0409

Protocol / Run temperature
Medium Cell (5 - 20µm) / CRT

Levitation (Actual / Design)
20 min / 20 min

Sample collection
Sequential

EOS Module / Core SN
EOS 10012 / 202-37785

Started by
sab-KT

Completed on
8/28/2024 11:30 AM

Notes
-

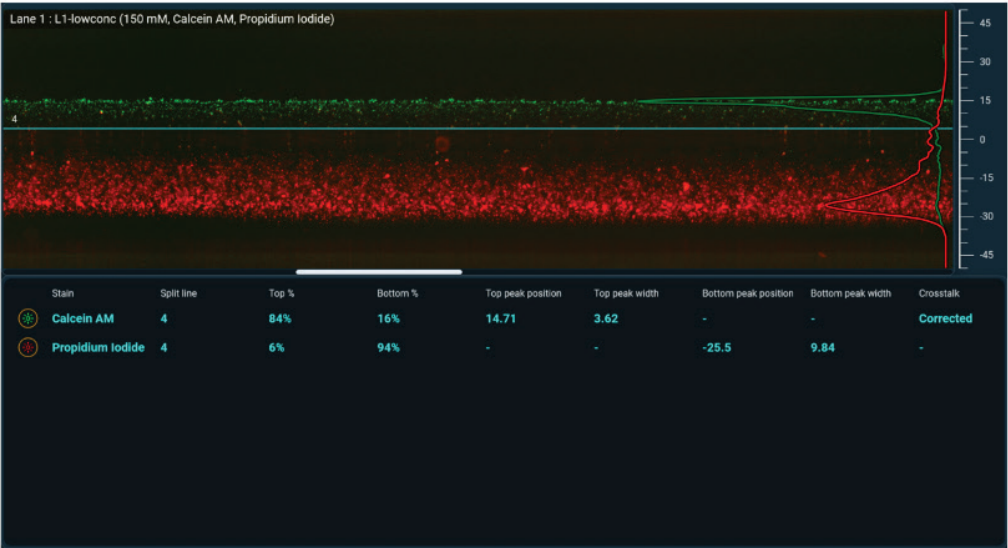


Figure 41. Profile Analysis Run Summary

CLOSING A RUN

Individual runs can be closed independently. Click the blue 'X' button to the right of each run name at the top of the screen (Figure 42). Alternatively, the menu option "Close" or "Close all" can be used.

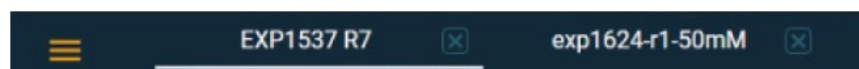


Figure 42. Closing runs

A run cannot be closed while the analysis is being performed. A temporary message indicating this will appear in the bottom right of the screen (Figure 43).

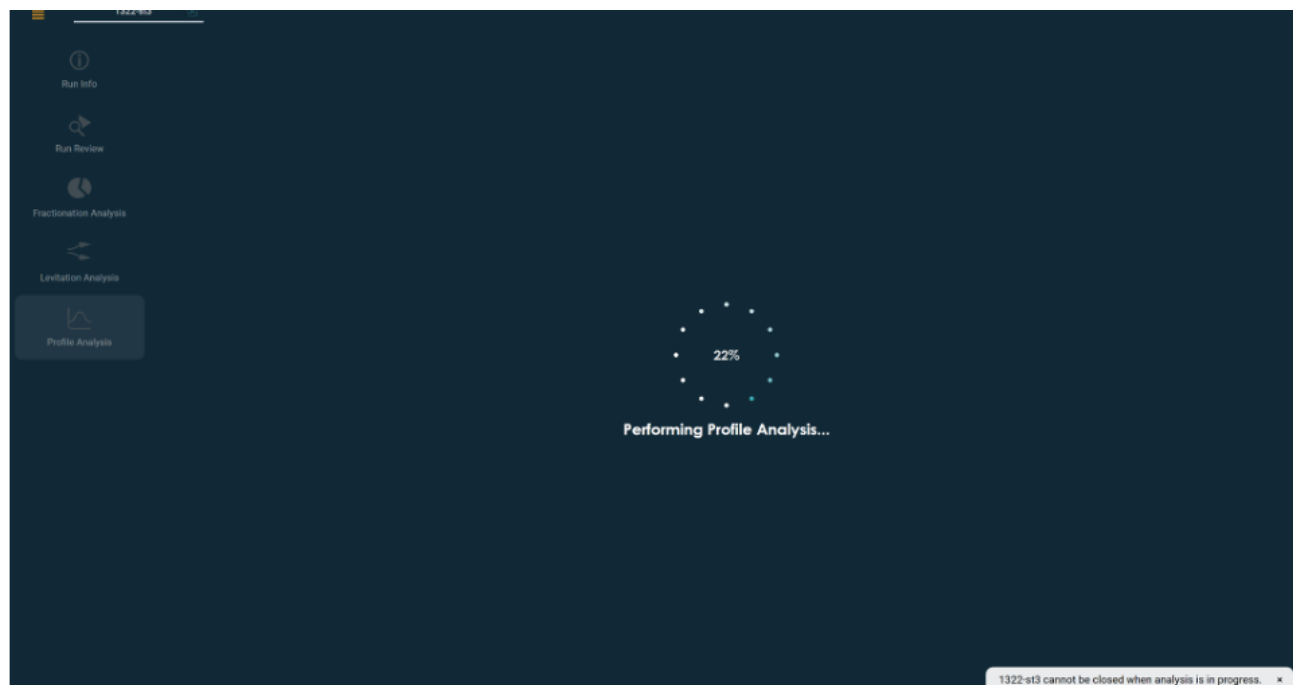


Figure 43. A temporary message appears when attempting to close while a run is still loading

EXITING LEVIMETRICS

It is possible to close an instance of LeviMetrics if you have more than one open. Use the Menu option to exit. Other instances and the opened runs will not be affected.

1. Click Exit from the menu (Figure 44)
 - a. The user will be prompted to confirm closing the user interface (Figure 45).

Note that any analysis will be saved automatically with the run once it is completed.

- b. If a run is in progress of analysis or loading, a message will appear noting that the software is not ready to be closed until the process is complete.

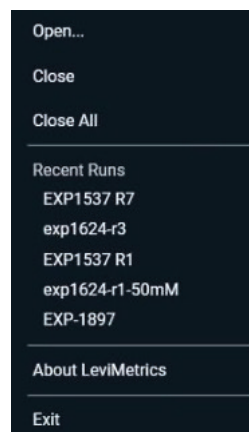


Figure 44. Expanded Menu

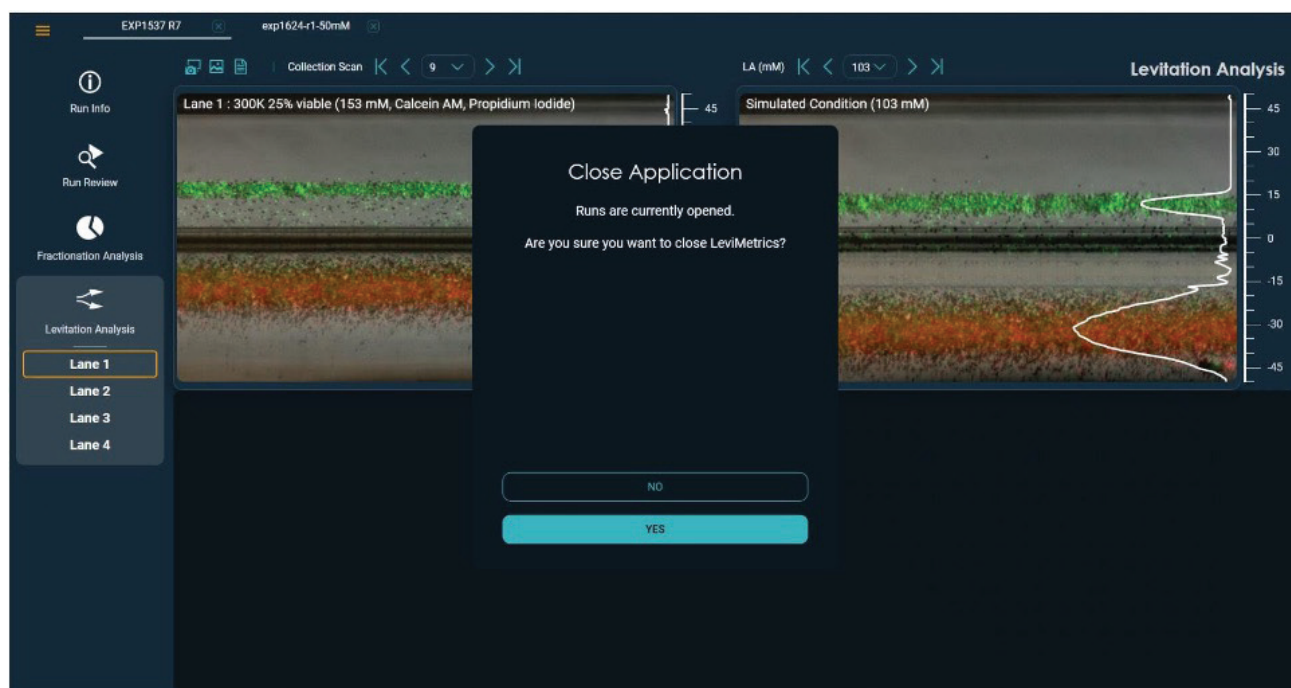


Figure 45. Closing application confirmation dialog message

TROUBLESHOOTING

Issue	Possible Resolution
Levitation Agent concentration not reflected in simulation	Concentration entered is outside of normal range. Enter value between 50-200 mM.
Run cannot be closed	Runs cannot be closed when analysis is in progress.
Cannot find generated report	Reports are exported to a Fractionation or Levitation Analysis folder within the same folder where the run *.exp file is stored.
Need to open more than 3 runs for analysis	Open a new instance of LeviMetrics. Go to the desktop icon and double click to open a new instance of LeviMetrics.
Cannot close application	LeviMetrics cannot be closed when a run is loading or when an analysis is in progress.
Cannot view fluorescence signal	Toggle the red or green fluorescence imaging button.
Cannot simulate Levitation Agent concentration that is within 50-200mM range	Simulations are limited to +/- 50mM range from the original experiment concentration.
One lane was not analyzed	A sample loading issue may have interfered with analysis.
Cannot see all of the features on my display	Adjust the display resolution on your monitor or reduce the text size in Windows' Display Settings.
Only see collection images for one lane	Runs collected with Parallel Sample Collection mode only have collection images for the first lane.

Table 3. Troubleshooting

Contact support@levitasbio.com or call Technical Support at +1-650-204-1185, if any errors are encountered during the procedure.