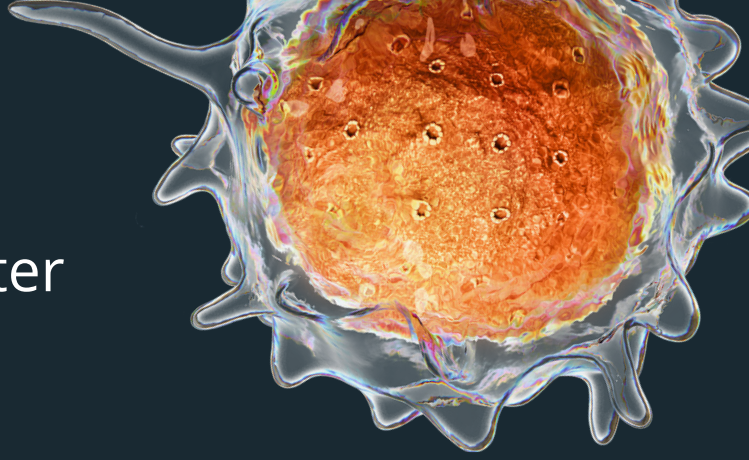
DATASHEET



Easier Insights Delivered Faster

Berkeley Lights Software Suite 2.4: Designed with You in Mind

Our new software upgrade is **loaded with customer-requested features** that focus on **reduced touchpoints** and **more intuitive data analysis**. Workflow improvements allow you to **preserve your precious samples** and **save time** with operations and instrument maintenance. Analysis improvements with **more comprehensive data viewing** options guide you to results faster. Combined, these improvements allow you to **experience a faster and easier workflow**.

Overview and New Feature Highlights

Run your workflows and analyze your results with ease using the seamlessly integrated and intuitive Berkeley Lights Software Suite (**Figure 1**). Comprised of three separate software packages, the Software Suite guides you through each step of the process including instrument setup, data collection and analysis and cell selection for export. Cell Analysis Suite (CAS™) controls platform system operations, from importing samples to exporting live cells of interest. This software prompts users for setup and operation to successfully record individual NanoPen™ (pen) chamber images at multiple time-points throughout their experiments. Pen images are then sent to Image Analyzer (IA) for conversion into experimental data. Features include assay scoring, cell counting, image consolidation, time lapse images

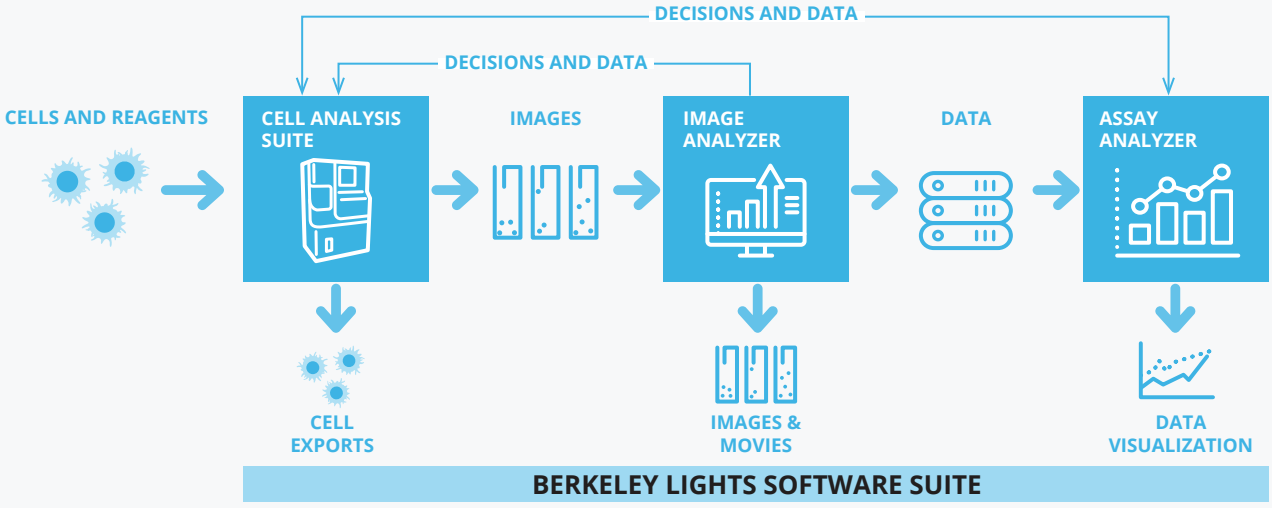


FIGURE 1: Berkeley Lights Software Suite provides a complete solution to guide you through operation and analysis of your assays.

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and pseudo color application for multiplex assays. In this software, images and data can also be exported for use in reports and publications. Relevant image and assay data are then sent to Assay Analyzer (AA) for more extensive data analysis to help you derive insights. Using this powerful analysis tool, you can apply filters to sort and down-select pens of interest, create pen lists, generate graphs and make decisions about your workflow. The communication feedback structure between the three distinct modules makes it possible to easily assess cell and assay quality in real-time providing confidence that you are selecting the best individual cells for live export.

With the newest version 2.4 of the Software Suite, you will be able to access important enhancements specifically requested by our customers (**Table 1**). New features include improved workflow operations, imaging and analysis that make it easier than ever to control all aspects of Beacon™ or Lightning™ system operations. With these upgrades, you can expect:

- Shorter time commitment with reduced user touchpoints
- Conservation of precious samples with improved sample loading
- Faster results with more automation and intuitive data access

Excited to learn more about our new usability features? Request a copy of the User Release Notes from techsupport@berkeleylights.com.

Automated Analysis

Sift through your data in half the time with new analysis features that emphasize speed and automation. Enhanced pen montage views show pens of interest consolidated on a single screen. These views are configurable to highlight and prioritize the pens you need to see first. For example, the Cell Line Development (CLD) workflow can be configured to prioritize and highlight the top N *DiGr* scores. A similar feature is available for Opto™ Plasma B Discovery workflow (**Figure 2**). In this case, you can toggle between verified hits (orange border) and non-verified hits (gray border) as well as zoom in with high-level and detailed views.

When you would like to show how a pen acts throughout a run, a time-lapse feature allows you to easily create images and videos for publication or presentation: The new *Save Movie or Strip* feature allows you to produce a film strip of side-by-side images, as shown in the time-lapse view of a single pen (**Figure 3**). In this mode, you will have the choice to create a static image (e.g. .png) or a movie (e.g. .mp4).

Beyond imaging, you can also perform cell counting on full time-lapse sequences. With a single *Analyze* button, you now have the option to count based on *All Views* and *Time Steps*. This will build growth graphs (**Figure 4**), and optionally allow you to save a cell count CSV file for each of the time steps. With this new automatic feature,

CAS 2.4	IMAGE ANALYZER 2.4	ASSAY ANALYZER 2.4
Sample recovery and re-import for sample conservation	Enhanced montage data viewing for easier and faster hit and assay scoring	Improved timeline interface for easier data management and visualization
System cleaning improvements for more robust systems	Trellis plot functionality for more in-depth analysis	
Customizable workflow operations for increased functionality	Film strips from timelapse images for easier reporting	
Refined image quality during unload for better accuracy		

TABLE 1: Highlighted customer-requested feature additions in Berkeley Lights Software Suite v2.4.

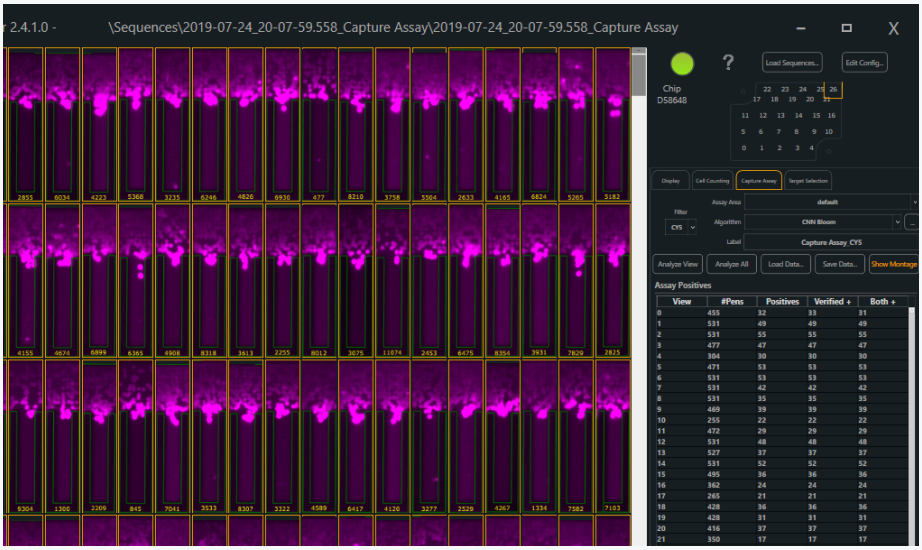

FIGURE 2: Montage view consolidates only verified hits (shown) or non-verified hits for easy analysis review.

searching for data and manually constructing curves will be a thing of the past.

For analysis of additional parameters, the new *Dual-Parameter* and *Trellis Plots* show the change in parameter values over time. With this enhanced functionality, you can plot two parameters against each other—for example, the X-centroid against the Y-centroid of targets to show the motility of those targets in the pen. You can also generate a montage of trellis plots that separates out the results of each pen (**Figure 5**).

Analysis time is further reduced with an improved user interface in Assay Analyzer that helps you make sense of data coming out of your system. The new color-coded interface for the *Chip Timeline* view makes it easy to distinguish and filter image sequences by type (**Figure 6**). Plus, all imaging operations are now displayed

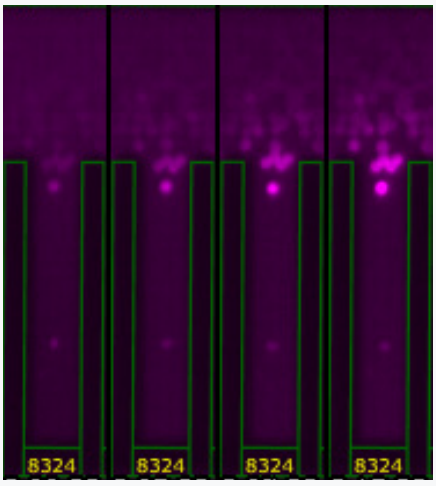

FIGURE 3: Film strip view shows time-lapse series of single selected pen.

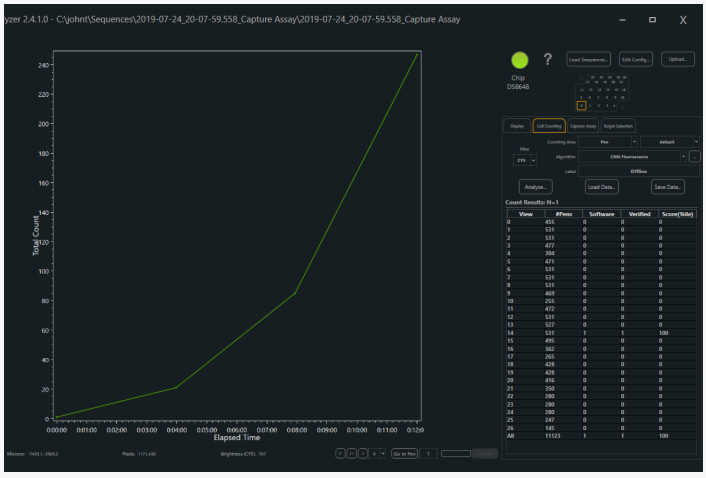

FIGURE 4: Time-lapse counting of cells provides automated growth curves.

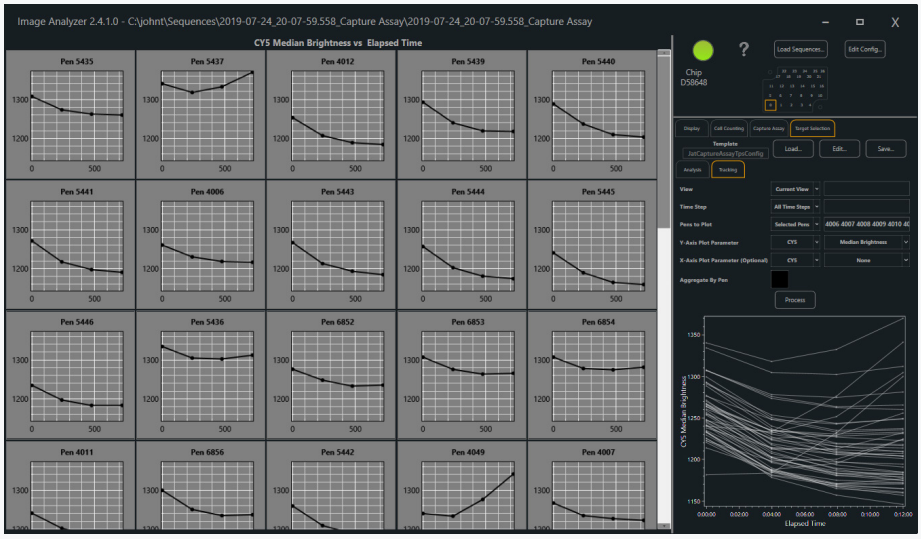

FIGURE 5: Trellis plots easily show change in parameters over time.

with relative length segments to prevent long timelapse imaging sequences from dominating the screen and allowing shorter imaging sequences to be more easily identifiable.

Streamlined Workflow

Spend less time in front of the instrument so you have time to tackle other tasks. The most recent upgrade focuses on reducing required user interactions throughout the workflow process. One of the most valuable features of this upgrade not only saves you time through increased automation, but also saves your precious samples by reducing the risk of complete sample loss. Specifically, the software enables recovery and reimport of samples during manual QC. This gives you the chance to achieve a better cell distribution without worrying about wasting your sample.

Another key design feature of the software upgrade is a reduction in user touchpoints that cut hands-on time and limit workflow interruptions while waiting for user action. Specific touchpoint improvements

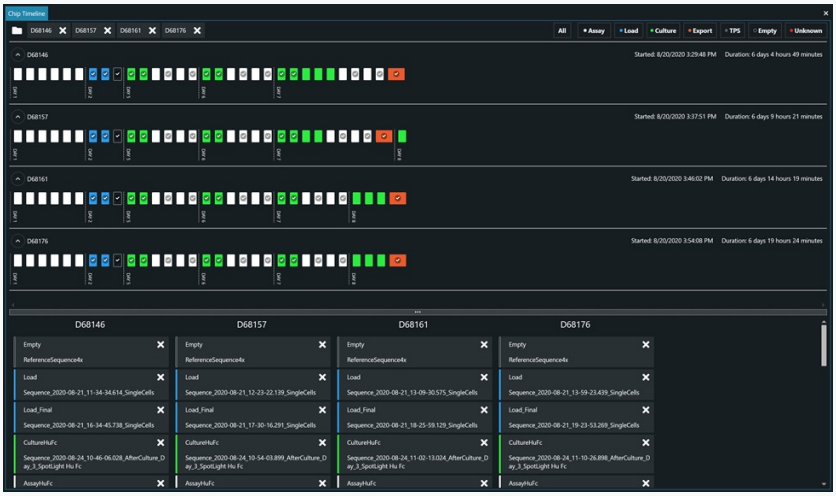

FIGURE 6: The new Chip Timeline interface uses color-coding and icons to make finding image sequences easy.

include combined prompts for manual mixing and pipetting suspension during manual sample import thus increasing automation and ensuring sufficient sample mixing. Additionally, a manual QC prompt will time out and continue the workflow if not answered in a specified time. The instrument will log the action and automatically continue with the workflow.

This software version is now more configurable to expand reagent and consumable compatibility and more accurately capture associated information. During loading, two new advanced parameter settings are available for specifying load reagent and media names. Additionally, culture type can be specified during idle operations for continuous or pulsed culture to enable customers to further optimize workflows for better cell growth. Before and after unloading, the chip ID is now easy to display in a hoverable pop-up menu over a well of interest. And finally, well plate supply chain issues will no longer be an obstacle. The new CAS software enables users to add and automatically calibrate the depth of both new and existing well plates.

Increased Accuracy

Generate more insights with improved data accuracy and more analyzable images. Increases in consistency and usable fields of view are seen with refined chip calibration techniques. The option for periodic chip recalibration leads to potentially better cell detection and tracking. Additionally, chip calibration frequency can also be increased to every 30 minutes during unloading to ensure continued optimization of imaging.

Easier Instrument Maintenance

Worry less about routine procedures and instrument maintenance. New features ensure more effective cleaning and storage procedures for your instruments. Long-term storage clean uses an ethanol rinse as the final rinse operation to more effectively prepare your instrument for scheduled downtime. Additionally, the software reminds you when it's time to clean by prompting a full clean if one has not been performed in the past 72 hours. Finally, improvements that reduce pump errors and allow user calibration of the WPI ensure that your instrument remains running smoothly.

Conclusion

Berkeley Lights Software Suite v2.4 continues the Berkeley Lights commitment to consistently provide our customers with new capabilities and easier functionality. For a comparison of software version capabilities see **Table 2**.

With this new upgrade you can run your workflow faster than ever with more accuracy and more insights. We're excited to show you how your feedback has led to the most advanced software yet. Contact your FAS or techsupport@berkeleylights.com to request an upgrade.

WORKFLOW	CAPABILITY	V2.0	V2.1	V2.2	V2.3	V2.4
AbD	OptoPlasma B Discovery	≤ 2.0	≤ 2.0	≤ 2.0	≤ 4.0	≤ 4.0
CLD	OptoCLD	√	√	√	√	√
CTD	Cell Therapy Development	√	√	√	√	√
CTD	Adherent Cell	√	√	√	√	√
CTD	Multiplex Cytokine Assay	–	√	√	√	√
CTD	OptoSeq 3'mRNA	–	–	√	√	√
CTD	TCRSeq	–	–	√	√	√
CTD	Cytotoxicity Assay	–	–	√	√	√
AbD	OptoSeq BCR	–	–	–	√	√
CLD	Population Dynamics	–	–	–	√	√
CLD	Aggregation Assay	–	–	–	√	√
CLD	Generalized Productivity Assay	–	–	–	√	√
CLD	Selective Cell Cloning	–	–	–	√	√
All	Usability Enhancement	–	–	–	–	√

Workflows and capabilities may be instrument dependent. CLD and AbD aplications are only available on the Beacon system.

TABLE 2: Capabilities and user features continue to expand with each new software version for Antibody Discovery (AbD), Cell Line Development (CLD), and Cell Therapy Development (CTD) workflows.

FAQ

1 How do I upgrade to Software Suite v2.4?

Upgrades require a visit from the Berkley Lights service team and are included with your Performance or Essential Service Plans. Contact technical support to request an upgrade.

2 Am I required to upgrade to all software packages within the suite?

On a single machine, yes; a single license is provided for the full suite and is version dependent. For example, CAS 2.4 is required to successfully install and run AA 2.4. We highly recommend that you upgrade to access the most recent features and benefits. Data collected with previous versions will still be compatible with all future version of CAS, IA and AA.

3 I have a much older version of the software. Can I still upgrade to 2.4?

Yes, you can upgrade to the latest version from any previous version. We always recommend that you upgrade to stay current with all capabilities and user-friendly features.

4 I'd like more details about specific upgrade features. How can I find out more?

User Release Notes (MAN-08185) are available on the Tech Support Portal. Feel free to contact technical support or your FAS to learn more about the software.

Specifications

Component Version
Cell Analysis Suite (CAS) software 2.4, Image Analyzer 2.4, Assay Analyzer 2.4
Windows® operating system 19043 or later
.Net 5
NVIDIA Driver 471.68 or later
Intel Driver OS defaults
Spii Motion Controller 2.7
Andor SDK 3.13.30034.0

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