Microlucida®

Release Notes

Version 2023.1.2 (April 2023)

NEW FEATURES AND ENHANCEMENTS

New imaging and data handling engines

MBF Bioscience software includes new image acquisition and image/data display technologies that maximize efficiency and speed throughout Microlucida. Compile, save, load, display, and process your files ***much*** faster than before. These new imaging and data-handling engines employ intelligent image loading, concurrent usage of CPU cores, and multiple levels of data caching for efficient use of RAM and GPU resources. The speed and capabilities of Stereo Investigator software are now limited only by the resources of the computer on which it's installed.

You will see major improvements in overall function and performance; highlights include:

- Acquire much larger images than was previously possible—in the multiple terabyte range
- Load very large image and data files noticeably faster than before—no lagging, no crashing
- Handle millions of data points simultaneously—faster software response than ever before
- Combine multiple data files, each containing massive numbers of markers and/or traced structures

Improved slide scanning workflow

The new imaging engine dramatically increases the size of images that can be acquired. The speed of image acquisition and assembly in the slide scanning workflow has also been improved. Benefits include:

- Create larger slide-scans—at higher magnification and/or from larger specimens than possible in previous releases
- Preview images before finalizing your large-image compilation settings
- Include optional XY stitching for better image-tile alignment and cleaner compiled images
- Mitigate uneven illumination artifacts in fluorescence imaging using (optional) intelligent, image-data based flatfield correction
- View the amount of disk space needed for the slide scan before starting the image acquisition
- Compile large images faster
- Compile partial scans in the event an acquisition fails partway through

Software authorization and options

- Easier software authorization—Microlucida has a new, easier to use, licensing mechanism. License can be updated for renewal, or trial without having to connect to MBF staff
- Floating licenses are now available

More options for opening images

- Indicate how you want Microlucida software to handle and display your images

- Open all images in container files such as Leica .lif and Zeiss .czi formats
- Choose to display in a grid, stack images, or display on top of each other without stacking
- Drag and drop to open files—the new Image Opener window makes it easier and more powerful

Other improvements

- New hardware support for the following:
    - Zeiss Apotome 3
    - Luminera CMOS camera
    - Basler camera
- Added support for the Leica K5 and K3C cameras'
- New support for the following image formats
    - Big tiff
    - Hdf5
- Custom Z offset is now available for use in Device command sequences
- New Freehand Selection tools provide more options for selecting markers or contours
- The default data-file format is now .xml
- Research Resource Identifier (RRID) is now recorded in every xml data file
- Simpler automatic exposure (in the camera settings) to achieve the target luminance for each image acquisition
- Updated the Illumination Correction tool
- New automatic, smart image-optimization preference for low-signal images available
- Updated tool tips that display when hovering on buttons and tools throughout the software

Issues Resolved

Numerous bug fixes throughout the software. These include:

- Additional functionality to revive communication with Hamamatsu camera and resume a slide scan
- Lumenera camera intensity & gain discrepancy in monochrome mode between acquire and live video is resolved
- Fixed the issues with high gain conversion mode with a Lumenera camera