



Living Image®

Release Notes Version 4.5.4

1. Purpose

This document provides a brief overview of improvements made to Living Image 4.5. The improvements made include a number of bug fixes. The release notes for Living Image 4.5 cover new features and fixes in that release, and are available on the PerkinElmer web site at <http://www.perkinelmer.com/lab-products-and-services/resources/in-vivo-imaging-software-downloads.html>. This minor release serves as an update for Living Image 4.5 on all current IVIS Spectrum instruments and workstations.

2. New Features

This release includes several new features:

- The Export Graphics button now allows for exporting the image cropped to any defined subject ROIs.
- The Delete Spectrum button in the Spectral Unmixing window now deletes the spectral components that are selected using the check boxes, instead of always deleting the last one in the list.
- Improved defect maps for the CT subsystem in SpectrumCT reduce the presence and intensity of some artifacts in CT reconstructions.

3. Other Improvements

This release includes a number of fixes to reported issues. These are detailed below.

Acquisition

- Improved photon calibration stability on SpectrumCT instruments at f/2 and f/4.
- Fixed an issue that could cause a crash when the Stop or Abort button is clicked during acquisition.
- Fixed an issue that could result in bioluminescence images of negative controls being acquired with exposure times that were too short.

3D and Multi-Modality

- Enable the FLIT tool palette for sequences created using Spectral Unmixing + FLIT.
- When loading a saved DLIT result for which a calibration database was selected during reconstruction, that quantification selection is loaded as well.
- Fixed an issue that prevented some DLIT data acquired under LI 4.3.1 from being reconstructed properly in later versions.
- If the DICOM file for a Spectrum CT sequence fails to load, the FLIT or DLIT tool palette will not be displayed.
- Fixed an issue that could cause artifacts in some reconstructions of DLIT data acquired on SpectrumCT.
- Fixed an issue that prevented a 3DMM result from being loaded properly if the data were loaded using the Volume Data Viewer.
- Refined the behavior of the color scale synchronization buttons depending on how many 3D sequences are open.
- The color scale synchronization buttons are now only enabled when all loaded 3D sequences have the same voxel sizes.
- Fixed an issue that could cause a file read and write error when loading 3D Multi-Modality results from certain sequences.
- Fixed an issue that could cause a crash if automatic crop failed during surface generation for a one-click reconstruction. If the automatic crop fails, the one-click reconstruction will be stopped so that a manual surface reconstruction can be performed.
- Fixed an issue that could result in a crash during surface reconstruction on some sequences.

Other

- Fixed an issue that prevented background ROIs from working properly when the background ROI was defined in a different image in the sequence from the Measurement ROI to which it was being applied.
- Fixed an issue that could cause Living Image to crash when retiring an image from certain types of sequences.
- Fixed an issue that caused the Export Graphics button to be disabled when loading certain sequences using "Load As Group."
- Fixed an issue that could cause extra image attributes to be displayed in the ROI Measurements window.
- Changed the status of several potential messages during Image Math computation from Errors to Warnings.
- The ROI and Voxels columns can no longer be removed from the 3D ROI Measurements table.
- Fixed an issue that caused the Load and Remove buttons in the Browser window to be disabled when deselecting one of several selected sequences.

4. Known Issues

Previously discovered known issues are detailed in the Living Image 4.5 release notes, which are available at the link above. In addition, the following issues exist that will be addressed in a future release of Living Image:

1. After removing the XFOV lens on Lumina and un-checking the box for the lens in the Control Panel, f/1.2 is still available for selection. As a workaround, un-checking the box and then exiting and re-launching Living Image will correctly remove f/1.2 from the list of available f-stops.
2. Opening an existing sequence or click using the “Load sequence setup” button in the Control Panel can trigger an application crash, both on Spectrum CT and on Lumina if the zoom lens is enabled in camerainfo. To avoid this crash, use the Imaging Wizard or the Add and Insert buttons in the Control Panel to set up your imaging sequence.
3. Hovering over the plot in the Optical Properties tab of user preferences can occasionally trigger an application crash.

5. System Requirements

PC:

Windows 7 32-bit

2GHz Core 2 Duo or higher processor recommended

4GB RAM

Windows 7/8.1/10* 64-bit

2GHz Quad Core (i5, i7) processor

8GB RAM recommended for IVIS Spectrum CT data analysis

Mac:

OS X/macOS* 10.10 to 10.12

2GHz Core 2 Duo or higher processor recommended

4GB RAM or higher recommended for IVIS Spectrum CT data analysis

Note: Support for Mac OS X 10.7 and earlier has been discontinued in Living Image 4.5.

* Windows 8.1, Windows 10 and OS X/macOS are supported for the analysis module only. A Mac computer equipped with an ATI Radeon video card or certain Intel Iris Graphics chipsets is required for 3D Multi-Modality support on OS X.

6. Video Card Requirements

3D Multi-Modality tools require that the graphics processing unit (GPU) meet the minimum specifications shown below. If the appropriate license is not installed or the GPU does not meet these specifications, the 3D Multi-Modality tools will not appear in the tool palette.

Specification	Description
OpenGL Version Requirement*	OpenGL 2.0 and above
OpenGL Extension Requirement*	GL-EXT-Texture3D
Graphics Card Memory:	Recommended: 1GB (Dedicated)
Consumer Graphics Cards (Desktop/ Mobile, Windows/Mac)	Supported: – NVIDIA® GeForce® 8 Series and above (8, 9, 100, 200, 300 and 400 series) – ATI Radeon™ HD 4000 Series and above (4000 and 5000 series) – Intel HD 3000 and above and Intel Iris/Iris Pro Graphics (Mac) Recommended: – Desktop - NVIDIA GeForce GT 240 and above – Mobile - NVIDIA GeForce GT 230M and above
Workstation Graphics Cards (Desktop/ Mobile, Windows/Mac)	Supported: – NVIDIA® Quadro® NVS Series and Above (NVS & FX series) – ATI FireGL™ V5600 and Above (FireGL, FirePro & CrossFire series) Recommended: – Desktop - Quadro FX 1800 and above – Mobile - Quadro FX 880M and above

*If these specifications are not met, the 3D Multi-Modality tools will not appear in the tool palette.