From Eye to Insight

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LAS X
for Confocal Systems

Release Notes LAS X 3.5.7

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Release documentation for LAS X 3.5.7

This document describes the 3.5.7 release of the Leica Application Suite X imaging and analysis software for advanced live cell research. You should read this document before installing a copy of this software.

All reasonable steps have been taken to ensure that this publication is correct and complete. Should any user be in doubt about any detail, clarification may be sought from Leica Microsystems CMS GmbH, or their accredited representatives. The information in this document is subject to change without notice and should not be construed, as a commitment by Leica Microsystems CMS GmbH. Leica Microsystems CMS GmbH accepts no responsibility for any errors that may appear in this document.

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1. Compatible Microscopes and Technical Requirements

1.1 Compatible Microscopes and Hardware Requirements

The LAS X 3.5.7 control software is a release for legacy confocal systems running on LAS X, including the SP8 confocal platform, the SPE and the LSI. Accordingly, it is not compatible with the new STELLARIS confocal platform and legacy confocal systems not capable of running LAS X (i.e., systems running LAS-AF such as the SP5). All Leica-supplied workstations for the respective confocal platform meet the minimum PC requirements of the LAS X 3.5.7 control software.

1.2 Operating System Requirements

LAS X 3.5.7 is a genuine 64-bit program and runs on Windows 7 64bit and on Windows 10 64bit.

2. Reason for this Release – LAS X 3.5.7

LAS X 3.5.7 is a release to address vulnerabilities in a 3rd party application (WIBU CodeMeter) shipped with LAS X. Importantly, LAS X 3.5.7 also entails several major bugfixes addressing the usability of LAS X 3.5.6, namely for the Navigator, Dye Assistant and FALCON.

3. Recommendations

For an optimal performance and the safety of the product, we strongly recommend the installation of/upgrade to LAS X 3.5.7 for SP8, SPE and LSI systems!

4. Open Issues / Restrictions

The following list enumerates the known product limitations of LAS X 3.5.7:

- Navigator: Limited capabilities for water dispenser

Workaround: In the Navigator, the water dispenser cannot pump water during TileScan- and xyt-scans. As workaround, the optional HCS-A package can be used for controlling the water dispenser in stage application experiments.

- Z-stacks can be slower with z-Flow (GalvoFlow) enabled

Workaround: The z-Flow enables maximum acquisition speed in experiments entailing the z-dimension. However, for certain experimental settings (xyzt-scan mode with few z-planes) it is possible that the acquisition is faster with disabled z-Flow. The experimenter can guarantee to use the highest acquisition speed by comparing the total experimental time with and without z-Flow.

- TauSTED: Decay curve occasionally missing

Workaround: Occasionally, the decay curve for TauSTED experiments is not shown. In this case, the user can click on “FLIM” to show the decay curve.

- Error during export of multiple LIF files in parallel

Workaround: Exporting multiple LIF files is not supported. Thus, users must export LIF files sequentially. Furthermore, the LIF format is widely supported (including 3rd party and open source software such as ImageJ, MATLAB or Python).

- LDM does not apply z-compensation for laser correctly in multicolor loops

Workaround: If LDM is set up with two colors, the z-compensation value from the last image will be applied from the second loop on, i.e. also in the first channel this fixed value of laser power would be wrongly applied. For most applications, there

are two workarounds available: (i) Split the multicolor experiment into distinct LDM jobs (then the z-compensation will be applied correctly in loops). (ii) Alternatively, use the Navigator and its z-compensation.

- FCS: Bleach point defined in xz-scan not used for data acquisition

Workaround: For most applications, it is acceptable to set up different FCS measurements at different z-positions.

5. Solved Issues / Restrictions

Amongst other bugfixes, we have resolved the following issues/restrictions from the LAS X 3.5.6 release:

- Dye Assistant: Cannot choose detector type
- Navigator: Save overview (preview) not working
- Navigator: Frame Averaging / Frame Accumulation not available
- Navigator: Toggling between main wizard and Navigator (leads to black screen)
- Navigator: Merging leads to intensity changes (at tile borders)
- Navigator: Lost z-compensation window when closing Navigator with open z-compensation dialogue (until LAS X restart)
- FALCON: xt-scans not available
- FALCON: FLIM analysis leads to blank data when ROI applied to 2nd or 3rd channel of a line-by-line sequential scan
- FALCON: No photons after drawing ROI on frame sequential experiment (“Attempted to divide by zero” error)