

From Eye to Insight



# LAS X

## for Applied Microscopy only

### Release Notes LAS X 5.2.2 Patch

## **Release documentation for LAS X 5.2.2**

This document describes the 5.2.2 release of the Leica Application Suite X imaging and analysis software for applied microscopy. You should read this document before installing your copy of this software.

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**Date: February 1st, 2024, applying to build number 28326**

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## 2 New changes

1. WIBU CodeMeter Runtime CVE Fix (Security)

## 3 Newly supported Hardware

1. none

## 4 End of Life. unsupported Hardware

1. none

## 5 Known Issues – Workaround

Key	Summary	Status	Affects Version/s	Comments/Rationale
<a href="#">LASX-25917</a>	Annotation + Measurement not shown after restart	Prioritized	5.2.0	Workaround: re-enabling show/hide Annotation / Measurement after restart.
<a href="#">LASX-25885</a>	3D Surfache Viewer - error and application crash while drawing 'Surface Volume' measurement on multifocus image with more step size say.25 (randomly occurrence))	Prioritized	5.2.0	Workaround: use step size < 20
<a href="#">LASX-25871</a>	SE : Reticule disappears on zooming at Review tab (worked fine in old 5.2.1 builds)	Prioritized	5.2.0	Workaround : Click scale bar button and Reticule appears again. But on zooming it again disappears.
<a href="#">LASX-25805</a>	File icon not consistent	Prioritized	5.2.0	Workaround: do not manually add a suffix ICC/LVCC/SVCC to any file
Key	Summary	Status	Affects Version/s	Comments/Rationale
<a href="#">LASX-25761</a>	LASX-25737.03 Measurement templates loaded	Prioritized	5.2.0	Workaround : Delete all the templates and re load the templates again.

	temporarily incorrected			
<a href="#">LASX- 25760</a>	LASX-25737.06 - Measurement line adjustment unprecise	Prioritized	5.2.0	Workaround : Do Second click far from line and then again near the line will drag the line and not image.
<a href="#">LASX- 25759</a>	Scalebar burned-in at the zoomed in position	Prioritized	5.2.0	Workaround: Keep scalebar disabled during zooming till the intention is to burn in scale bar. Enable scale bar to burn in expected position
<a href="#">LASX- 25805</a>	File icon not consistent	Open	5.2.0	Workaround: do not manually add a suffix ICC/LVCC/SVCC to any file
<a href="#">LASX- 25761</a>	LASX-25737.03 - Measurement templates loaded temporarily incorrected	Open	5.2.0	Workaround : Delete all the templates and re load the templates again.
<a href="#">LASX- 25754</a>	LASX-25737.01 - Temp files are getting mixed up after some time of using LASX	Open	5.2.0	Workaround: Clean up temp file folder if you observe decrease in performance
<a href="#">LASX- 25746</a>	incorrect "Max inscribed circle" value is measured	Backlog	5.2.0	Workaround: Do not use "Analysis optimized for high number of particles" for images with size greater than 50000 Pixel. This is automatically implemented in 5.2.1.
<a href="#">LASX- 25544</a>	DVM6 right light intensity is resetting to '40' when we change the UI language	Backlog	5.2.0, 5.2.1	Workaround: readjust light intensity after switching language in UI
<a href="#">LASX- 24518</a>	DataContainer - DC Registry Entries are writable for everyone (AM)	Backlog	5.2.0	Workaround: Check setting of temp data folder in LAS X Configuration Tab. Should be set to one of your expected folder with known access rights.
<a href="#">LASX- 24438</a>	Drawn measurements/ annotations does not get saved to captured images - rare occurrence	Prioritized	5.1.0	Workaround: Disable option "Automatically activate Live Image". Switch back to live to recover measurement and redo capture
Key	Summary	Status	Affects Version/s	Comments/Rationale

<a href="#"><u>LASX-24201</u></a>	DMC6200 : Camera not loading , says unknown series frequently	Backlog	5.2.1	Solution 1: Disconnect the USB plug from the PC during startup/wakeup and reconnect it. Solution 2: Shut down the System and start it by pushing the power button actively.
<a href="#"><u>LASX-22930</u></a>	HW Configurator - Change stage selection will not get applied in fine tuning	Backlog	5.2.0	Workaround: Close HW Configurator and reopen to refresh values in screen
<a href="#"><u>LASX-22815</u></a>	CE: Outline shift more as 5µm	Backlog	5.2.0, 5.2.1	Customer information: 1) Pre-condition: Align Hardware very precise (Camera calibration up to 1 Pixel, Rotation up to 1 Pixel) Stage 90° orthogonal to Z Axis 2) Disable Merge algorithm by change to manual overlap = 0
<a href="#"><u>LASX-22214</u></a>	CE - Threshold peak missing in the graph when folder (with images) is selected instead of first Image	Backlog	5.1.0, 5.2.0	Select image instead of a folder to overcome issue
<a href="#"><u>LASX-19061</u></a>	'Spot Exposure' option is not available under right click context menu	Backlog	5.0.3	Workaround: Use Autoexpsoure functionality which uses full frame.

## 6 Compatible Microscopes and Cameras

### 6.1 Compatible Microscopes\*

Microscope/ System	Compa-tibility	Comments
<u>Inverted Microscopes</u>		
Leica DMi8	NO	
Leica DMi8 M/ C/ A	YES	
Leica DMI6000 B/ with AFC	NO	
Leica DMI5000 M	YES	
Leica DMI4000 B	NO	
Leica DMI3000 B/ M	YES	
Leica DM IL/ M	YES	
Leica DMI1 with integrated camera	NO	
<u>Upright Research Microscopes</u>		
Leica DM4 B/ M/ P	YES	
Leica DM6 B/ M/ as LMD base	YES	
Leica DM12000 M	YES	
Leica DM8000 M	YES	
Leica DM6000 B/ M/ as LMD base	YES	stands with production date >=2008 only
Leica DM5500 B	NO	
Leica DM5000 B	NO	
Leica DM4500 B	NO	
Leica DM4000 B/ M/ P /LED	YES	stands with production date >=2008 only
<u>Fixed Stage Microscopes</u>		
Leica DM6 FS	NO	
Leica DM6000 FS	NO	
<u>Stereos and Macroscopes</u>		
Leica M205 C/ A/ FA/ FCA	YES	
Leica M165 C/ FC	YES	
Leica M125/ M125 C	YES	
Leica M80	YES	
Leica M60	YES	
Leica M50	YES	
MZ16 F/ A/ FA	NO	
MZ10 F	YES	
Z16 APO/ APO A	NO	
Z6 APO/ APO A	YES	
S8 APO	YES	
S6 D	YES	
S APO	YES	
S9D / S9i	YES	
<u>Digital Microscopes</u>		
DVM6	YES	
EMSPIRA 3	NO	
DMS 1000	YES	
DMS 300	YES	
VZ 700C (DVM2500)	NO	

<u>Upright Routine Microscopes</u>		
Leica DM3000 / LED	YES	
Leica DM2700 M/ P	YES	
Leica DM2500 M/ P/ LED	NO	
Leica DM2000 / LED	YES	
Leica DM1750	YES	
Leica DM1000 / LED	YES	
<u>Educational Microscopes</u>		
Leica DM750	YES	
Leica DM500	YES	
Leica EZ4E	YES	only USB, Ethernet not supported
Leica EZ4HD	NO	
Leica EZ4W	YES	only USB, Ethernet and Wifi not supported
<u>TIRF and GSD Systems</u>		
Leica AM TIRF MC	NO	
Leica AM TIRF MC with AFC	NO	
Leica SR GSD	NO	
Confocal systems in combination with Leica AM TIRF MC	NO	
<u>Forensic Stands</u>		
FSC	YES	stands with production date >=2008 only
FSM	YES	stands with production date >=2008 only
FS CB	NO	
FS 4000	NO	
<u>LIBS</u>		
LIBS Modul	YES	

## 6.2 Compatible Cameras

<b>Leica Color Camera</b>	<b>Leica Monochrome Cameras</b>
DFC295 (3)	DFC3000 G (1)
DFC450 (3)	K3M
DFC450 C (3)	
DFC7000 T (1)	
DMC2900 (1)	
DMC4500 (1)	
DMC5400 (1)	
DMC6200 (1)	
IC90E (2)	
ICC50 W/E (2)	
K3C (1)	
K5C (1)	

(1) USB 3

(2) USB 2

(3) Firewire B

(4) Camlink

Note 1) DMC2900 is only supported with 8 Bit. It will work with a USB2.0 interface but with limited functionality

Note 2) DMC4500 will work with USB2.0 interface but only a single image format available (full frame)

Note 3) DFC3000G & DFC 7000T requires a USB3.0 interface and will not work with USB2.0 interfaces.

Note 4) Wi-Fi and Ethernet connection are not supported in LAS X

## 6.3 Compatibility to previous Versions

### 6.3.1 Compatibility to former LAS X versions

**It is recommended to uninstall LAS X Versions before 5.x.x prior to the installation of LAS X 5.2.2**

LAS X 1.x dongles used on DVM6 systems need to be upgraded, before using them with LAS X 3.0.8 or higher (otherwise some functions will be missing).

LAS X 3.0.11 or higher can read and process files generated with LAS X 1.x

### 6.3.2 Compatibility to LAS

LAS X 5.2.2 can read, and process single images generated with LAS versions. However, image series generated with LAS need to be imported with the LAS X file importer by entering the metadata manually.

LAS versions cannot read data acquired with LAS AF or LAS X software versions.

## 6.4 Compatibility to Firmware Versions

In most cases, the LAS X installation takes care of installing the required microscope firmware. However, in some cases, the updating of the firmware may not take place. The firmware then must be updated manually via the LAS X Hardware Configurator.

The correct versions of firmware for use with LAS X 5.2.2 are

**DMI 8:**

DMI8 Master (XE167FH200F100L_MASTER.HEX)	V03.20
DMI8 Master FPGA (XP2_17_MASTER.HEX)	V210
SBM I2C (DSPIC33FJ128_SBM_I2C.HEX)	V01.01
motCORR (DSPIC33FJ128_MOT_CORR.HEX)	V01.11
AFC (TMS320F28335_AFC.HEX)	V02.27
SmartMove (TMS320F28023_SMARTMOVE.HEX)	V01.10
Sideports (DSPIC33FJ128_DC_TURRETII.HEX)	V01.07
Bottomport (DSPIC33FJ128_DC_TURRETII.HEX)	V01.07
Z Axis (DSPIC24HJ064_STEPPER.A.HEX)	V01.15
XY Axes (DSPIC24HJ064_STEPPER.A.HEX)	V01.15
Buttons Left (DSPIC33FJ128_BUTTONS_LEFT.HEX)	V01.08
Buttons Right (DSPIC33FJ128_BUTTONS_RIGHT.HEX)	V01.04
Nosepiece 2 positions (DSPIC33FJ128_NOSEPIECE_2POS.HEX)	V01.01
Nosepiece (DSPIC33FJ128_NOSEPIECE.HEX)	V01.17
IL Turret (DSPIC33FJ128_DC_TURRETII.HEX)	V01.07
Mag. Changer (DSPIC33FJ128_DC_TURRETII.HEX)	V01.07
T-House Splitter (DSPIC33FJ128_DC_TURRETII_B.HEX)	V01.05
DIC (DSPIC33FJ128_STEPPERB.HEX)	V01.05
IL Diaphragms (DSPIC33FJ128_STEPPERB.HEX)	V01.05
PIC GSD (PIC_GIST.HEX)	V01.01
FRAP (DSPIC24HJ064_STEPPER.A.HEX)	V01.15

Lamphouse (STM32F301K8_LAMP2.HEX)	V01.03
WF Scanner (DSPIC24HJ064_STEPPER.A.HEX)	V01.15
Sequencer 2 (STM32F303CCTX_SEQUENCER2.HEX)	V01.02
Sequencer 2 FPGA (XP2_17_SEQUENCER2.HEX)	V01.26
Touch Panel 2nd Generation (TPC-G2.exe)	2.17.4

### Compound (except DMI 8):

Master Module (DM4000, DM4500, DM5000) (MAN1.HEX)	V01.31
Leica Screen Module (DM5000) (MAN2.HEX)	V01.07
Master Module (DM5000, DM5500, DM6000, DM6) (SYS.HEX)	V02.60
Master Module (DM4000, DM4500, DM4) (BM-16Bit.HEX)	V02.90
Master Module (DMI6000, DMI5000, DMI4000) (DMI.HEX)	V02.91
Master Module (DM8000, DM12000) (DM8_12000.HEX)	V02.20
Touch Panel 2nd Generation (TPC-G2.exe)	2.17.4
Touch Panel (STP6000) (TPC6000.exe)	1.46.0
DM3000 Master (DM3000.HEX)	V02.30
Condenser Module (PH/DIC) (KONDSCH.HEX)	V01.06
Condenser Module II (PH/DIC) (KONDSCH01.HEX)	V01.01
Condenser Module III (PH/DIC) (KONDSCH02.HEX)	V01.03
XYZ Module (DM6000, DM5500) (XYZ_DIS.HEX)	V01.10
Advanced XYZ Module (XYZ_ADV.HEX)	V03.40
Advanced Z Module (Z_ADV.HEX)	V03.40
LMD 6000 Head (LMD_6000.HEX)	V01.24
Master Module LED4000 (LED4_7000.HEX)	V01.04
LED7000 (LED7000.HEX)	V01.04
AFC DSP (AFC_DSP.HEX)	V01.25
PIC motCORR (PIC_Corr.HEX)	V01.03
PIC GSD (PIC_GIST.HEX)	V01.01

### DM6:

Master Module (DM6 2020) (XE167FH200F100L_MASTER_DM.HEX)	V01.30
Master Module (DM6, DM5000, DM5500, DM6000) (SYS.HEX)	V02.60
Master Module (DM4, DM4000, DM4500) (BM-16Bit.HEX)	V02.90
Master Module (DM8000, DM12000) (DM8_12000.HEX)	V02.20
Master Module (DM4000, DM4500, DM5000) (MAN1.HEX)	V01.31
DM Master FPGA (XP2_17_MASTER.HEX)	V210
SBM I2C (DSPIC33FJ128_SBM_I2C.HEX)	V01.01
motCORR (DSPIC33FJ128_MOT_CORR.HEX)	V01.11
SmartMove (TMS320F28023_SMARTMOVE.HEX)	V01.10
Z Axis (DSPIC24HJ064_STEPPER.A.HEX)	V01.15
XY Axes (DSPIC24HJ064_STEPPER.A.HEX)	V01.15
Nosepiece 2 positions (DSPIC33FJ128_NOSEPIECE_2POS.HEX)	V01.01
Nosepiece (DSPIC33FJ128_NOSEPIECE.HEX)	V01.17
IL Turret (DSPIC33FJ128_DC_TURRETII.HEX)	V01.07
Mag. Changer (DSPIC33FJ128_DC_TURRETII.HEX)	V01.07
TL Diaphragms (DSPIC33FJ128_STEPPERB.HEX)	V01.05
DIC (DSPIC33FJ128_STEPPERB.HEX)	V01.05

IL Diaphragms (DSPIC33FJ128_STEPPERB.HEX)	V01.05
Zoom (DSPIC33FJ128_STEPPERB.HEX)	V01.05
Lamphouse (STM32F301K8_LAMP2.HEX)	V01.03
Sequencer 2 (STM32F303CCTX_SEQUENCER2.HEX)	V01.02
Sequencer 2 FPGA (XP2_17_SEQUENCER2.HEX)	V01.26
IL Module DM (STM32F303CCTX_ILMODULEDM.HEX)	V01.09
Condenser 2 DM (STM32F303CCTX_CONDENSER2DM.HEX)	V01.02
Condenser Module (PH/DIC) (KONDSCH.HEX)	V01.06
Condenser Module II (PH/DIC) (KONDSCH01.HEX)	V01.01
Condenser Module III (PH/DIC) (KONDSCH02.HEX)	V01.03
Leica Screen Module (DM5000) (MAN2.HEX)	V01.07
Touch Panel 2nd Generation (TPC-G2.exe)	2.17.4
Touch Panel (STP6000) (TPC6000.exe)	1.46.0
XYZ Module (DM6000, DM5500) (XYZ_DIS.HEX)	V01.10
Master Module LED4000 (LED4_7000.HEX)	V01.04
LED7000 (LED7000.HEX)	V01.04
Advanced XYZ Module (XYZ_ADV.HEX)	V03.40
Advanced Z Module (Z_ADV.HEX)	V03.40
LMD 6000 Head (LMD_6000.HEX)	V01.24
PIC motCORR (PIC_Corr.HEX)	V01.03

### Stereo:

DVM6-Base	V5.00.484890	(DVM6_Base.bin)
DVM6-Camera	V1.38.674056	(DVM6_Camera.bin)
DVM6-LED	V5.00.533950	(DVM6_LED.bin)
DVM6-MCU	V5.00.381414	(DVM6_MCU.hex)
DVM6-Zoom	V5.00.569227	(DVM6_Zoom.bin)
DVM6-XYZ	V5.00.498432	(DVM6-XYZ.s)
M205-D (Display)	V5.00.656739	(M205_D.bin)
MAZ1 (Coded Knob)	V5.00.458206	(MAZ1.bin)
MDG30 (TL RCI)	V4.01.338410	(MDG30.hex)
MDG43 (TL Ergo)	V5.00.446074	(MDG43.bin)
MDG41i (TL Ergo)	V4.01.438080	(MDG4x.bin)
MEB109 (LED MCI)	V3.01.212854	(MEB109_V51.hex)
MEB110 (LED RL)	V3.01.128263	(MEB110_V51.hex)
MEB111 (LED HDI)	V3.01.267922	(MEB111_C30.hex)
MEB112 (LED CXI)	V3.01.136125	(MEB112_C30.hex)
MEB113 (LED NVI)	V3.01.136125	(MEB113_C30.hex)
MEB115 (LED RL)	V3.01.591555	(MEB115_C30.hex)
MEB121/122 (DVM2500 IL)	V3.01.162839	(MEB121_122_C30.hex)
MEB124 (LED RL)	V3.01.408218	(MEB124_C30.hex)
MEB125 (LED MCI)	V3.01.267778	(MEB125_C30.hex)
MEB127 (LED SLI)	V3.01.386468	(MEB126_127_C30.hex)
MEB128 (DVM2500 TL)	V3.01.218256	(MEB128_C30.hex)
MEB129 (LED MCI)	V3.01.216808	(MEB129_V51.hex)
MEL82-DCI	V4.01.320196	(MEL82DCI.bin)
MEL90 (CAN2RS232)	V5.00.479890	(MEL90.bin)
MFS17 (Footswitch)	V3.03.255036	(MFS17.hex)
MFS17 rev1	V5.00.644974	(MFS17_r1.bin)

MHS3 (Control)	V2.12	(MHS3.hex)
MHS5 (Joystick)	V3.01.119315	(MHS5.hex)
MHS6 (SmartTouch)	V5.00.537513	(MHS6.chex)
MHS7 (Focus Control)	V3.01.267191	(MHS7.bin)
MRE17/18/19 rev1 (Obj.Rev)	V5.00.560185	(MRE18_r1.bin)
MRE17/18/19 (Obj.Rev)	V4.00.320268	(MRE18_V51.hex)
MST31/34 (Focus)	V1.32	(MST31.hex)
MST51 (Focus)	V3.02.492813	(MST51_V51.hex)
MST5x-DCI	V4.01.534019	(MST5XDCI.bin)
MST51 rev1 (Focus)	V5.00.716608	(MST5x_r1.bin)
MTI91 (IsoPro Stage)	V3.01.167675	(MTI91.hex)
MTI91-DCI	V3.01.133449	(MTI91DCI.hex)
Mxxx Fluo Auto rev1	V5.00.715203	(Mxxx_FA_r1.bin)
Mxxx Fluo Auto	V3.03.481710	(Mxxx_FA_V51.hex)
Mxxx Fluo Coded rev1	V5.00.559889	(Mxxx_FC_r1.bin)
Mxxx Fluo Coded	V3.01.120368	(Mxxx_FC_V51.hex)
Mxxx rev1 (Zoom)	V5.00.560177	(Mxxx_r1.bin)
Mxxx (Zoom)	V4.00.400935	(Mxxx_V51.hex)
Z(1)6APOA (Zoom)	V4.01.281758	(ZxxAPOA_V51.hex)

## 7 Software Advices

### 7.1 Cybersecurity Advices

Leica Microsystems recommends the installation of all available security updates and hotfixes for Microsoft Windows.

Please check the regularly updated Leica Microsystems Product Security web page to get the latest information and recommendation regarding product security vulnerabilities and detailed mitigation strategies.

[www.leica-microsystems.com/company/product-security/](http://www.leica-microsystems.com/company/product-security/)

If you need further information or are not sure about security fixes suggested by a system component manufacturer, please contact us via [www.leica-microsystems.com/service/](http://www.leica-microsystems.com/service/)

If a vendor of a PC system component announces a severe security vulnerability, it is also recommended to update the drivers/software as suggested by the vendor (i.e. graphic card drivers).

### 7.2 Installation Advices

**Warning!! This version of LAS X is an Industry release only. Do not install on Confocal or Widefield systems.**

**Warning!! Do not upgrade firmware via LAS**

Perform firmware updates only via the Leica Hardware Configurator tool installed together with this LAS X release.

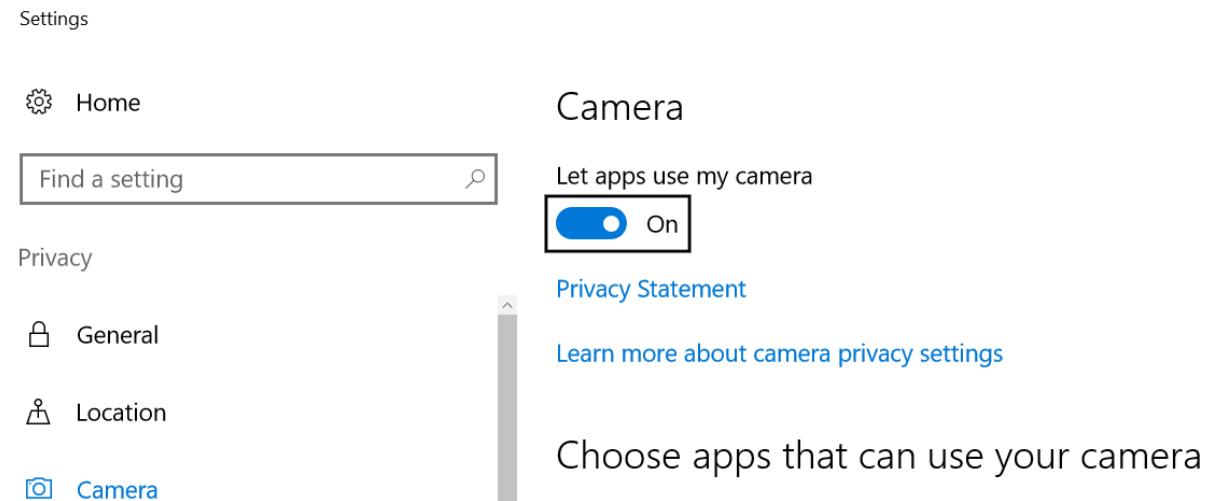
## 7.3 Operating System

**LAS X is a genuine 64-bit program and runs on Microsoft Windows 10 only.**

**Validated on** Windows 10 21H2 - 19044.1766

## 7.4 Camera Privacy Settings

Microsoft introduced with Windows 10 build 1803 „Camera Privacy Settings”. There is the possibility to disable/enable the usage of UVC cameras. Please ensure when using **DVM6, IC90, ICC50 W, S9i, or EZ4 W/E** that “Let apps use my camera” is enabled.



### USB3 cameras:

Leica USB3 cameras are tested with USB3 PCIe cards from DeLock. These cards have a Renesas PD720202 chipset. Leica strongly recommends using these cards. The majority of the Leica USB3 cameras are delivered with this USB3 PCIe card.

If you plan to use a different card or an onboard-USB port with a different chipset, please make sure you have the latest drivers from the card manufacturer and the latest Windows updates installed. Leica cannot guarantee that there is no issue when not using the recommended USB3 PCIe card.

Please also branch the internal power supply when using a card.

Some cameras have considerable power demanding and deliver large amounts of data. Leica recommends using each camera on a separate card. Leica recommends not to use other instruments with high power requirements, such as external hard drives, on the same USB socket.

Some computers have a USB3 charging port (USB3 with a flash sign). We do not recommend using this port, since the camera will never power off and can prevent the computer from rebooting.

## 7.5 Microsoft Office

It is required to use Microsoft Office 365 64-bit

Verified on Version 2204 Build 16.0.15128.20278 and Version 2206 Build 16.0.15330.20246)

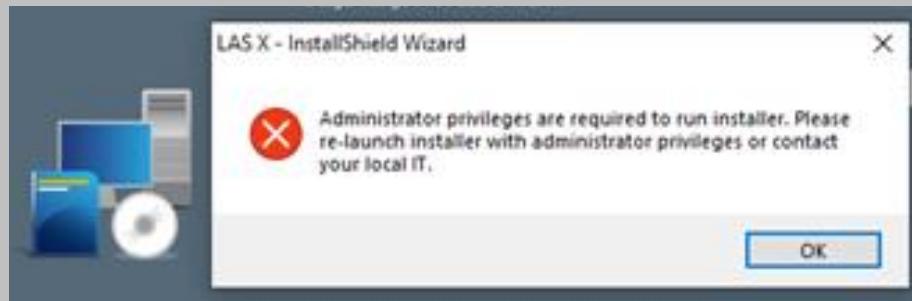
## 7.6 Leica MAP

It is required to use Leica Map in Version >= [V9.3.10281](#)

## 7.7 Policy restrictions

### Address company specific IT policy restrictions

**Note:** If you observe the following message during installation:



**Dependent on your IT policy you might miss rights for a proper SW installation.**

**Potential workaround:**

**Lock in with a local administrator account (outside domain)**

**Install LASX from this account.**

## 8 Hardware Advice

### 8.1 Recommended PC Configuration:

CPU:	Intel XEONW-2123 3.6 4C CPU
RAM:	32 GB DDR4 2666 ECC REG RAM
Hard drive:	512 GB SSD/4TB HDD
Graphics board:	NVIDIA QUADRO P1000 4GB

### 8.2 PC minimum requirements

CPU:	Intel Core-I5 3,20 GHz
RAM:	16 GB DDR3-1333 ECC
Hard drive:	500 GB HDD
Graphics board:	NVIDIA QUADRO P400 2GB

Graphics board Nvidia NVS 315 (1GB) is sufficient  
for systems without 3D Visualization.

### 8.3 Monitor requirements

Monitor: minimum screen resolution is 1000 lines vertically

If you are using LAS X with a DVM 6 using a Monitor with 5k resolution is recommended, at least 3k is required.

**Note: Please make sure that when creating large images, the PC should have Image Size [Px] \* 8 bit free RAM. (24 bit for color images)**

**The available free RAM defines the maximum image size.**

**Please check data space availability on your hard drive bevor performing extensive data acquisition to avoid loss of data!**