



# Leica Application Suite

## System Requirements V3.3.0

### Abstract

This document describes the microscopes, cameras and accessories that are supported by this version of LAS and defines the computer system requirements. You should read this document before installing your copy of this software. This document also acts as a supplement to the User Guide that is on the LAS Disk.

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# 1 Supported Microscopes, Cameras and Accessories

The following Leica microscopes and digital cameras are supported.

For **LAS Power Mosaic**, please see Section 3 for supported equipment.

## **DM Microscopes**

DM1000, 2000, 2500, 3000, 4000 B/M, 4500 B, 4500 P, 5000 B, 5500 B, 6000 B/M

DMI4000 B, 5000 M and 6000 B

DM500, DM750, DM750 P

FSC

CTR 4000-6500

### **Accessories for DM**

Scanning stages

External light source EL6000

External filter wheels

TIRF module

Motorized duo documentation tube

## **Stereo- and Macroscopes**

LED illuminations LED5000 CXI (coax) and LED3000 NVI (near vertical)

Manual stereomicroscopes M50 and M80

M205A, fully motorized stereomicroscope with 20.5:1 zoom range

M205FA, fully motorized fluorescence stereomicroscope with 20.5:1 zoom range

M165FC, manual fluorescence stereomicroscope with coded filter wheel, zoom and iris and 16.5:1 zoom range

M125, manual stereomicroscope with 12.5:1 zoom range

MST 51 / MST 59 motor focus

FluoCombi™ attachment for fluorescence stereomicroscope with coded objective positions

Fluorescence objective revolver with coded objective positions

Coded Stereo Zooms M165C and M205C

LED illumination LED5000 MCI and LED5000 RL-80/48

USB interface for new manual focus drive coarse/fine

MST 31 (Motor focus)

MZ 16A and MZ 16FA

Z 6 APOA and Z 16 APOA  
IsoPro™ motorized XY stage  
Configuration of new footswitch  
Configuration of UMC  
MZ 16F, MZ 16  
MZ 12.5  
MZ10 F  
MZ 9.5, MZ 7.5  
MZ 6  
MS 5  
S6D  
S8 APO  
Z6 APO  
Z16 APO  
EZ4 D (NOT Windows Vista)  
Macroflu™  
Fluocombi / Revolving nosepiece  
Support by USB for TL RCI and IsoPro™ motorized XY stage  
Support for USB / RS 232 serial adapter (Art. No. 11532295)  
Transmitted light base for Stereo Microscopes TL RCITM  
External light sources (Photonic CLS 150XD, CLS 150LS, Schott KL 2005 LCD, EL6000)

## **Acquisition and control devices**

### **Support for Windows XP and Windows Vista**

Leica DFC Cameras from Leica DFC280-DFC500, but excluding Leica DFC300, DFC300F, DFC350F.

Leica ICC50, Leica IC D and IC 3D are also supported.

### **NOT Supported**

LAS does not support the following:

Matrox Meteor 2 or Leutron frame grabbers,

Leica EC3

Leica DFC300, DFC300F, DFC350F

Leica DC100, DC150, DC160, DC180, DC200, DC250, DC300, DC480, DC500

## 2. Computer System Requirements

The recommended PC specification is described below. Lower specifications may limit the performance and some features of LAS.

If using LAS with Windows Vista, a Windows experience index of 3.5 is required for simple acquisition and 4.5 or higher where multiple images are being processed.

### Processor

Intel Core 2 Duo with nominal CPU clock > 2GHz or Intel Pentium 4 32-bit (x86) Processor with nominal CPU clock of > 3.0GHz and including at least:

- 2MbL2 cache
- 800 Mhz FSB

1 GB (2GB for Vista) or higher of system RAM installed. For processing large image stacks, 4GB is useful.

Hard Drive: 80GB or higher, SATA 7200 rpm, 8MB cache, NTFS

Display and Graphics - 19" or greater size monitor set to screen resolution of 1920 x 1200 or 1600 x 1200 or 1280 x 1024

Graphics card minimum values:

- 128Mb Ram minimum
- 128-bit memory bus width
- 32 bits operation
- Support for Direct X Version 9c or Direct X Version 10 for Windows Vista.
- PCI Express

The recommended minimum graphics adaptors are the Radeon X600 or X800 series graphics adaptors using the PCI Express bus or later models.

'Integrated' graphics cards may have reduced performance and are not recommended.

It is vital that the manufacturer's latest graphics drivers are installed for LAS V3.3 to display live images correctly and particularly for use with the LAS 3D Viewer and LAS MultiTime – Movie modules.

### Interfaces

A powered 1394a 6-pin FireWire OHCI port is required for use with Leica DFC cameras. For non-powered 4-pin (iLink) or 6-pin FireWire ports, the Laptop power kit 12730188 is needed.

Please note that FireWire interfaces must be 1394a (not 1394) to work with DFC cameras without impairing performance. Some DFC cameras (DFC400, DFC295, DFC310 FX, DFC 360FX) with a 1394b or FW-800

interface can also connect to a 1394b interface board - especially for high-speed applications or when a fast live image frame rate is required. Because certain 1394b interfaces have some non-Leica driver issues we recommend the use of only the high-speed Firewire kit 11600255 for LAS AF based systems or the PCI-Express Firewire-b board 12730210. Please note that you may also need the Firewire-b-b cable 12730186 if both camera and PC have a 1394b or Firewire-b connector.

One or two serial interface ports and USB2 interface ports are needed for the microscope and other external device control.

## **Operating System**

Windows Vista Business with service pack 1 or Windows XP Professional Edition with service pack 2 or 3 is required. Installation is as an Administrator. The User Account determines normal operation of LAS. Windows XP must be 32-bit version. Windows Vista can be 32 or 64-bit.

LAS requires multi-lingual support for Chinese, Japanese, Korean.

Note that a back-up device and a back-up strategy for images and databases is essential. The user must ensure that regular and reliable back up of important files is performed.

LAS does NOT support Win2000.

## **Other**

Keyboard and Mouse with wheel.

DVD-ROM compatible drive is required to install the LAS software.

400W PSU if all options are installed.

Full-height card slots for optional interface boards e.g. Oasis. The slot next to the Oasis board needs to be free or at least the next board must have low profile components.

This product requires approximately 450 Mbytes of disk space for a full installation and an additional free space of 10Gbytes for efficient operation. Further space is required for data and image storage, which depends on the application and frequency of use. The free space must be checked regularly.

## **Notebook Recommendations**

Notebooks and Laptops are normally designed for power saving rather than performance and so it is necessary to be careful in identifying suitable configurations. The true 'desktop replacements' that use desktop components in a movable but very heavy box, should be compared with the Desktop specification above.

Notebooks cannot be used with LAS Power Mosaic due to need for space to install the Oasis board.

Otherwise the recommended processor is the Intel Core 2 Duo with

speed greater than 2.0GHz. Because Notebook configured processors use a slower memory bus and slower hard-drives, the overall performance is not as good as the Desktop equivalents.

The smaller screen size of Laptops may not be comfortable for use with high-resolution images. Make sure that the vertical resolution is at least 1k because many Notebooks have lower vertical resolution that limits the image size and panel display.

Most important of all for Notebooks is to ensure that the display does not use an 'integrated' graphics controller. This will severely restrict live image performance. A Radeon x300, also known as FireGL V3100, is a suitable option – not quite up to Desktop performance but acceptable.

### 3. LAS Power Mosaic Supported Components

#### Summary

12 730 181	LAS Power Mosaic
12 730 182	LAS Power Mosaic Plus
12 730 193	Oasis-blue XYZ kit for Power Mosaic
12 730 194	Upgrade kit for Oasis-4i XYZ for Power Mosaic
12 730 195	Oasis-blue Encoder kit for Power Mosaic
12 730 196	Märzhäuser Scanning Stage, 130x85mm, 2mm with Encoders
12 730 197	Märzhäuser Scanning Stage, 130x85mm, 2mm
12 730 198	Stage insert for one slide for SCAN 130 x 85
12 730 199	Stage insert for four slides for SCAN 130 x 85
10 450 219	Oasis-blue XY kit for Power Mosaic and IsoPro stage
10 450 218	IsoPro 6x4" motorized XY-stage V2

Note – LAS Power Mosaic and LAS Power Mosaic Plus do not support motorised focus with Stereomicroscopes.

#### PC Requirements

Due to the large image data handled by Power Mosaic, a very fast PC is required with at least 2Gb RAM. The hard-drive must be very fast and large.

#### Microscopes supported

DM 5500 B, 6000 B/M

DM 4000 M - With addition of external focus motor

Generic microscopes with motor stage and motor focus

In combination with IsoPro™ stage - Macroscope (Z16APOA, Z6APOA, Z16APO, Z16APO) or any Leica current stereomicroscope.

## **DFC Cameras Supported by Power Mosaic**

**Please note ONLY the cameras mentioned are supported for Power Mosaic.**

### **Turboscan and standard scan mode**

DFC400, DFC300FX, DFC350FX, DFC360FX - Require trigger cable included with Oasis-blue kit

### **Standard scan only**

DFC290, DFC420 - Do not use a trigger cable.

## **Oasis-Blue Power Mosaic Kit**

10 450 219 Oasis-blue XY kit for Power Mosaic and IsoPro stage is required for use with the Leica IsoPro V2 stage.

12 730 193 Oasis-blue Controller board and Cable Kit includes:

XY Cable with Märzhäuser Round Connectors

Z axis and DFC Trigger Cable split cable

Smart Move or Joystick I/F Cable

MIC Box Pass-Thru (cable / ribbon cable / plate)

Focus adapter for Märzhäuser /DM6000/ Prior focus drive

## **Motorized Stage with Stepper Motors**

The current Märzhäuser 'Scan' series for DM4-6K and for DMI can be used. For the upright stands the following are recommended:

12 730 196 Märzhäuser Scanning Stage, 100x80mm, 2mm with Encoders

Requires 12 730 195 Oasis-blue Encoder kit for Power Mosaic

12 730 197 Märzhäuser Scanning Stage, 100x80mm, 2mm

At least one stage insert is also required:

12 730 198 Stage insert for one slide for SCAN 130 x 85

12 730 199 Stage insert for four slides for SCAN 130 x 85

The Smart Move controls the stage and focus - the focus knob on the

stand is disabled.

11 505 180 Smart Move for DM/DMI Series

10 450 218 IsoPro 6x4" motorized xy-stage V2 – note this stage is the new V2 stage that includes encoders.

## **Motorized Focus**

DM5500-6000 use internal focus motor

Driven by Oasis using CTRMIC control cable with Z breakout.

DM4000 use external Märzhäuser focus drive

Included with 11 101 938 DM4000 M stand

## **Encoder Option**

12 730 195 Oasis-blue Encoder kit for Power Mosaic

Used where best accuracy is required with high-mag objectives

Daughter board that fits on the Oasis-Blue board

Modified XY Cable for Encoder Inputs

Requires 12 730 196 Märzhäuser Scanning Stage, 100x80mm, 2mm with Encoders

## **OASIS-4i Upgrade Kit**

Enables customers with previous generation Oasis boards to upgrade

Assumes that the microscopes and stage control is already functioning

12 730 194 Kit includes

OASIS-DC1 daughter board

DFC Camera Trigger Cable

Does not include Smart Move kit.

Note – Oasis-4i will require a license code to be supplied



## 4 Factors that may reduce performance

The following is a non-exclusive list of PC components that may degrade performance of LAS. It is strongly recommended that the performance of LAS with a specific PC is tested to be acceptable before committing to its use.

LAS is for Windows-PC based computers only and is not available for Apple Mac computers.

Integrated graphics, AGP graphics, graphics that share CPU memory, using a mobile graphic device

Display on dual monitors

Use of displays with less than 1024 vertical resolution

Less than 400 Mbytes free RAM before LAS starts. (700Mbyte is required for LAS MultiFocus and LAS MultiStep, 1Gb for LAS Power Mosaic). With Windows Vista 2Gb or more RAM is essential.

Other programs running at the same time as LAS

Using a Celeron processor or any processor other than the recommended Pentium or Core-duo range

Using Athlon processors

Using any power saving on the system

Using 'sleep' mode 'hibernation', auto power down modes

Windows versions other than those recommended

Personally constructed PCs or operating systems

An environment that is an upgrade of the original manufacture-installed operating system

Multi-boot environments

Shadow or Animated cursors and UI graphics.

There is no expectation that the use of hyper threading, dual-core processors etc will give a performance gain.

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