

Leica DFC Camera CD
(DFC Camera Software)
Release Notes V 6.11.0

Leica
MICROSYSTEMS

Leica DFC Camera CD

Release Notes V6.11.0

Abstract

This document describes the V6.11.0 release of the Leica Digital Camera Software for the Leica DFC range of cameras. You should read this document before installing your copy of this software.

Leica DFC cameras use the FireWire interface and the Leica DFC Camera software package includes software and user guides for setting up and using these cameras.

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1 Introduction

The following software versions are included on this CD:

Leica DFC Twain – V6.11.0
Leica DFC500 Twain – V6.11.0

This release supports the following Leica DFC Cameras on a Windows PC:

- DFC280
- DFC290
- DFC290 HD
- DFC320
- DFC300 FX
- DFC340 FX
- DFC350 FX
- DFC360 FX
- DFC400
- DFC420
- DFC420 C
- DFC480
- DFC490
- IC D
- IC 3D
- DFC500

Please identify the type of camera that you are using before installing the software from this release.

If in doubt, check for the software specific to your camera at the Leica Microsystems website, www.leica-microsystems.com

Uninstall any previous version of Leica DFC Twain before installing a new version.

2 Installation

Installation and operation of the software is detailed in your Quick Start Guide and Image Acquisition Guide. These can also be found in the Manuals folder on the CD.

Upon inserting the CD into your computer you should be presented with your options to install the software or browse the CD.

However, if auto-run is disabled in your computer or the CD fails to run, open Windows Explorer for the CD and double-click "autorun.exe".

3 Reason for this Release

This version is intended to release new and additional functionality and maintenance that has taken place since the release of version V6.10.0.

In particular, it introduces two new Leica cameras, DFC400 and DFC290 HD.

4 System Requirements

Supported Microsoft Windows operating systems:

Vista

Please Note: Support for 64 bit operating systems requires an upgrade of firmware for existing 1394a DFC cameras. An upgrade tool is included in this release.

XP Professional (Service Pack 2)

Please Note: support for Windows 2000 operating system has been phased out.

You will need Power User or Administrative rights for installation.

In addition, Vista security requires you to start the installer by right-clicking and selecting "Run as administrator" even if you are logged on with administrator privileges.

The recommended PC specification is as follows:

- Pentium 4 + 3GHz Processor + 1Gb RAM memory
- Graphics: 128Mb RAM supporting 32 bit
- Display Monitor: 19in @ 1280 x 1024
- 4-pin or 6-pin FireWire OHCI port
1394A (400 Mb/s) for all Leica DFC cameras,
1394A or 1394B for Leica DFC360 FX, DFC400 & DFC290 HD,
or free PCI slot (for addition of FireWire interface)

Note: 4-pin FireWire ports require the Leica Laptop Power Kit to power Leica DFC cameras (12730188)

- CD-ROM drive or internet connection for download.

5 Changes in This Release

5.1 Features in V 6.11.0

New Leica DFC Cameras: Support for Leica DFC400 and DFC290 HD cameras. These cameras have a 1394b connector, and require a 1349b cable connected to a 1394b FireWire port, or an A->B cable connected to a 1394a port.

New Demo Camera: Ability to show Leica DFC Twain without specific camera hardware.

5.2 Fixes in V 6.11.0

Leica DFC500: With a shading reference active, changing the color balance caused the shading to become inactive. This is fixed - but see [Known Limitations](#).

Leica DFC290: Calibration in UXGA format was incorrect. This is fixed.

Leica DFC Twain: Some installations did not update the camera software correctly. This is fixed.

6 Changes in Previous Releases

6.1 Features in V 6.10.1

Image Capture: Improved image capture progress feedback.

6.2 Features in V 6.10.0

Leica DFC360 FX: This version introduces the Leica DFC360 FX.

This camera has a 1394b (800 Mb/s) FireWire connector, but can run on an existing 1394a port with an A->B cable.

Vista: This version fully supports Windows Vista (32-bit and 64-bit Operating Systems).

64-bit Operating Systems: Existing DFC cameras require a minimum firmware 1.9.0 to be recognised on any Vista or XP 64-bit operating systems. (The current firmware version for existing DFC cameras is 1.8.0.)

An upgrade tool is included. The upgrade must be done on a 32-bit operating system before attempting to connect the camera to a 64-bit system. See [Known Limitations](#).

Version information: Camera library and firmware versions are displayed in the Twain version information.

6.3 Fixes in V 6.10.0

Shading: Creating shading references caused random unexpected behaviour in DFC cameras. This is fixed.

High Sensitivity Binning: In Leica DFC FX cameras, by default this is now set to off, so that binned and non-binned modes appear as the same brightness.

6.4 Features in V 6.9.0

Additional (24bit) greyscale position in Pseudo Colour.

6.5 Fixes in V 6.9.0

Leica DFC290: White Balance error fixed.

Leica DFC290: Incorrect calibration in VGA mode fixed.

Leica DFC500: Problems with start-up and multi-shot modes fixed.

6.6 Features in V 6.8.0

Leica DFC cameras support Vista 32-bit.

6.7 Fixes in V 6.8.0

Leica DFC500: Disconnect/Reconnect camera errors fixed.

6.8 Fixes in V 6.7.2

Leica DFC290: Occasional black capture fixed.

6.9 Fixes in V 6.7.1

Leica DFC500: Error in ROI White Balance and gamma fixed.

6.10 Features in V 6.7.0

This release introduces support for the Leica DFC290 and DFC420 C cameras.

Pseudo Color for monochrome DFC cameras.

Crosshair indicator in the live image for better centering of subject.

Cooling option for Leica DFC490 and DFC420 C cameras.

6.11 Fixes in V 6.7.0

Memory leak when switching between shading references.

Improved White Balance for Leica DFC420 and DFC490 cameras.

Shading for Binning modes in the Leica DFC500 is now available.

Sharpening levels improved.

6.12 Features in V 6.6.1

This release is compatible with improvements in the Leica Application Suite 2.4.

Updated minimum computer requirements – see overleaf.

New firmware is required for Leica DFC500, and is included in this release. It is installed manually. See [Known Limitations](#) for details.

6.13 Fixes in V 6.6.1

Memory leak when opening and closing Leica DFC Twain is fixed.

Leica DFC500: Improved image stability and CPU load performance.

Leica DFC500: Changing from long to short exposures made the camera appear to hang. This is now fixed.

6.14 Features in V 6.6.0

This release introduces support for the Leica DFC420 and DFC490 cameras.

This release is compatible with improvements in the Leica Application Suite 2.3.

Recording optimized is now part of IM software and is no longer required nor displayed in Twain.

6.15 Fixes in V 6.6.0

Leica DFC500: White Balance improved.

Leica DFC500: Improved acquisition and CPU load performance.

6.16 Features in V 6.5.0

This release introduces support for the Leica DFC340 FX and DFC500 cameras.

This release is compatible with improvements in the Leica Application Suite 2.3.

6.17 Fixes in V 6.5.0

Improvements have been made to the capture HQ modes to eliminate edge artifacts.

When resizing the live image window Zoom Focus returned an incorrect region. This is fixed.

DFC280: When the Spot Exposure region is small, the live image may show alternating light / dark image. This is fixed.

DFC280: Shows alternating light & dark live images at certain exposures over 300ms. This is fixed.

Italian and Spanish installers did not detect a connected camera at install time. This is fixed.

6.18 Features in V 6.4.1

This release introduces support for the integrated IC D and twin-sensor IC 3D cameras.

Leica DFC cameras can support FireWire adapters (1394 controllers) compatible with the earlier IEEE 1394 standard (1997). The cameras were designed for the faster IEEE 1394A standard (2000) and must be modified by a firmware update (included here) in order to function with these adapters. There is some small performance loss. The devices are listed in Known Limitations.

Performance using the correct 1394A adapters is not affected.

This release is compatible with improvements in the Leica Application Suite 2.2.

Selection of Shading reference files has a save/delete option.

The Zoom Focus region is displayed at 1:1 resolution.

The camera control settings can be reset to default values in one step.

6.19 Fixes in V 6.4.1

Drawing a ROI from right to left in the live image returned an incorrect region. This is fixed.

The live image sharpening setting was not remembered when Leica DFC Twain closed. This is fixed.

The Gain value was reset to 2.0 when activating Auto Exposure. This is fixed.

In V6.3.0, when Spot Exposure was turned off Auto Exposure for the whole image still remained active. This is fixed.

When connecting Leica DFC and DC500 cameras at the same time, Leica DFC Twain incorrectly attempted to connect to the DC500. This is fixed.

Connecting a USB device or inserting an autoplay CD caused Leica DFC Twain to reinitialize the connected camera. This is fixed.

New FireWire drivers to improve transmission and reduce live image stop/starts.

Improved Under/Over Exposure indicators.

Vertical and horizontal scroll bars in the panning mode worked the opposite way. This is fixed.

White Balance ROI was incorrect when the cameras are used in Leica Application Suite (LAS).

The gamma control triangle in the histogram sometimes ended in the same position as the white or black level triangle, and was difficult to move without resetting gamma. A new method allows better access to this control.

6.20 Features in V 6.3.0

This release is compatible with improvements in the Leica Application Suite V2.

F6 hotkey is available to toggle between Pan and Standard modes.

Sharpening can now be applied to the live image.

In rare instances, errors in camera initialization caused Twain not to start. It is now possible to reset all cameras in such a situation.

6.21 Fixes in V 6.3.0

Leica Application Suite did not remember Twain 8/16 bit modes. This is now fixed.

Minimum exposures for DFC320 and DFC480 R2 cameras produced incorrect image density. This is now fixed.

The maximize window button did not produce a non-moveable maximum-sized window. This is now fixed.

The Auto-Brightness setting was not remembered. This is now fixed.

6.22 Features in V 6.2.1.1

This release is compatible with improvements in the Leica Application Suite V1.3.1 R2.

6.23 Fixes in V 6.2.1.1

Installing V6.2.0 more than once caused some camera recognition errors in some situations. The installer for this release fixes the problem.

Shortcuts in Start>Programs failed to appear in Chinese language. This is now fixed.

6.24 Features in V 6.2.1

This release is compatible with improvements in the Leica Application Suite after V1.3.0.

Improved White Balance functionality. Also Leica DFC Twain now displays the previous setting if a new White Balance fails, instead of resetting.

Automatic Exposure defaults to a higher brightness value (90%).

High Sensitivity by default is on for all Leica DFC FX cameras, and off for all other cameras with binning modes.

The Leica DFC Twain splash screen no longer appears at start-up.

6.25 Fixes in V 6.2.1

Applications did not always remember 16-bit mode when first opening. This is now fixed.

ROI on center scan modes incorrectly produced some error messages on capturing images. This is now fixed.

6.26 Features in V 6.2.0

Camera enhancements.

- DFC320 R2: Improved overall performance and new Zoom Focus in highest resolution.
- DFC480 R2: New color binning and highest resolution in both fast and HQ modes. Addition of hardware synchronization connector.
- DFC300 & 350 FX R2: Addition of hardware synchronization connector.

This release enables a user with minimum access rights (Restricted User) to create and save configuration and shading files. These files are saved in the All Users area. For installation, you still need to have Power User or Administrator privileges.

This is the first release supporting the Chinese language (Simplified Chinese).

Multiple Leica DFC cameras of the same or different model can be connected at the same time. Each camera is identified by its model and serial number which appear in the list of connected cameras. The current camera is also displayed in the Leica DFC Twain window title bar.

Camera hot-swapping has been improved. Leica DFC Twain automatically configures the currently connected camera and displays immediately its live image. If more than one camera is connected, it will switch automatically to the next camera in the list if the first is disconnected.

Addition of ROI defined region for automatic exposure, Spot Exposure.

Additional and improved Histogram generation.

- Luminosity - calculated as the average of red, green and blue pixel values. It is now displayed in gray and not gold as previously.
- Individual red, green and blue histograms.
- Combined - luminosity, red, green and blue values displayed together in one histogram window.
- The Gamma value is now also displayed optionally as a curve on each histogram.
- Histogram regions beyond the minimum Black and maximum White levels are colored as for under / over exposure (blue/ red).
- Separate Auto White and Auto Black Levels (Points).

Under/ Over Exposed regions are now displayed after shading correction is applied.

Image optimization available for recording directly into IM.

Any user created Color Calibration can now be switched on / off.

Default Color Saturation is now set at 1.5 and Gamma 0.6.

Improved Auto Exposure response time.

A new hot-key to switch Leica DFC Twain UI to and from Full Screen using F5 key.

For those camera modes which have Zoom Focus, this is now independent of Find Focus. It can also be switched off by clicking inside the Zoom Focus window.

Exposure, Saturation, Gain, Black, White and Gamma settings can now be entered directly in a second-level window in control panel.

Frame Rates can be shown / not shown in the Extra hidden menu.

An interface to the Leica IM Movie Recorder module is available via a live image check-box "Recording Optimized". This will allow a short burst of images to be streamed directly into Leica IM. (The number of images is dependent of the amount of RAM in your computer.)

You can put your computer into Standby and Hibernate modes while a Leica DFC camera is still connected. However the Leica DFC Twain host application must be closed.

6.27 Fixes in V 6.2.0

DFC 280, 480: With ROI selection in a Center Area resolution the resultant image that was scaled and positioned incorrectly. This is now fixed. The captured image is the ROI as defined for the Center Area.

DFC 320, 480, 300FX, 350FX: In a new session, the High Sensitivity Binning option was always on even if it was subsequently deselected at the session close. This is now fixed so that the current option is saved.

With High Sensitivity Binning option enabled the images produced were darker than when the option was disabled. This is now fixed so that the images are lighter with the option enabled.

DFC 480: When capturing an image as 8-bit and scaling was set to 1.5x the image sometimes was corrupted. This is now fixed.

Check Color incorrectly included values for the red/blue colors if the under/over exposure option was enabled. This is now fixed.

6.28 Features in V 6.1.1

This release enables Windows to locate the Leica DFC camera drivers more efficiently in the Found New Hardware Wizard.

In the Windows Device Manager, each DFC Camera is detected as a Leica DFC Camera.

When installing AND uninstalling any versions of Leica DFC Twain you must close all running Windows programs, otherwise not all components of Leica DFC Twain will be installed/uninstalled. Additionally we recommend re-starting the PC.

Uninstall any previous version of Leica DFC Twain before installing a new version. However the installer for V6.1.1 will detect V6.0.0 if it is still on the computer and uninstall it. Configuration files created with V6.0.0 are not compatible with V6.1.1, and the cameras will not function.

Introduction of Color Saturation control with a saturation range from a minimum that appears monochromatic to three times supersaturated.

6.29 Features in V 6.0.0

First release supporting the Leica DFC cameras with the PC.

The Leica IM software is now supplied on a separate CD with each camera purchased and is not on this CD.

The installation program has been changed so that both Leica DC and DFC cameras can be installed.

There are many new features in Leica DFC compared to DC Twain software; however the general operational method is unchanged. Please note that the software for DC does not include changes that have been introduced for DFC cameras as the new DFC software takes advantage of new features of the DFC cameras. In summary these enhancements include:

- Shading correction can be optionally applied to the live image
- Additional display modes include Standard Pan (full size live image that can be scrolled) and Fast display (interactive adjustments are disabled to improve speed of refresh)
- Image formats can be displayed as an abbreviated list for simplicity, or in complete detail (see Show All Resolutions in the hidden Extra menu)
- Four levels of sharpening can be applied to the acquired image

7 Known Limitations

7.1 64-bit Operating Systems & Leica DFC cameras

Firmware for existing 1394a Leica DFC cameras must be updated to version 1.9.0 before attempting to connect to a 64-bit operating system. The system will not recognise the camera otherwise.

Please note:

- It is not necessary to update the firmware for continued use on a 32-bit system.
- It is not necessary for 1394b cameras.
- After updating the camera firmware, the camera will only work with Leica DFC Twain v6.10.0 or later, for both 32-bit and 64-bit systems. You cannot roll back to an earlier version of Leica DFC Twain.

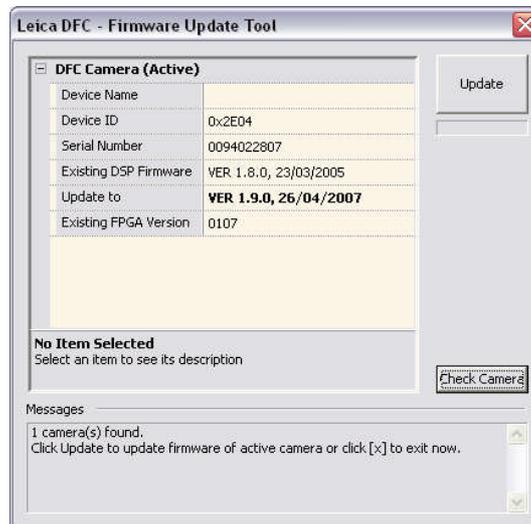
A method is provided in Leica DFCTwain V 6.10.0, and the firmware update can be done in the following way:

After installing Leica DFCTwain, connect the camera you wish to update, to the computer.

Close any application that may be using the camera.

Start the updater program from Start Menu>Program Files and locate *Leica DFC Twain* as select *Update DFC Firmware*:

You will be presented with the following window:



If *Existing DSP Firmware* version shows less than 1.9.0, the status message will show “Click Update to update firmware...”. Click the *Update* button and follow the instructions. Otherwise click [x] to abort the updating process.

Do not interrupt and do not unplug the camera during the updating process until you are asked to do so.

It is part of the process to unplug the camera briefly. After reconnecting the camera, you will be presented with a new Found New Hardware Wizard. Click *Next* and install the software automatically.

If successful, you can check that the new firmware version 1.9.0 is displayed, by clicking *Check Camera*.

At the end of the process, click [x] to exit. You can now use the camera.

If the update fails in some way please contact Leica support with details at:
di.support@leica-microsystems.com

7.2 Leica DFC Twain

The following computers/adapters have old IEEE-standard FireWire controllers. These devices will not produce a live image in Leica DFC Twain unless the attached DFC camera has been updated with firmware version 1.8.0 (or higher), and is used with Leica DFC Twain 6.4 0 or higher (see also Windows XP SP2 below):

- HP Compaq nx7010 (onboard FireWire)
(Please go to the HP Compaq website for a BIOS update to fix this issue.)
- Adaptec FireConnect for Notebooks AFW-1430 (laptop cardbus adapter)
- Trust FireWire Video Notebook Kit DV410 (laptop cardbus adapter)
- Belkin FireWire Cardbus Adapter F5U512 (the newer F5U513 adapter works well)

7.3 Leica DFC500

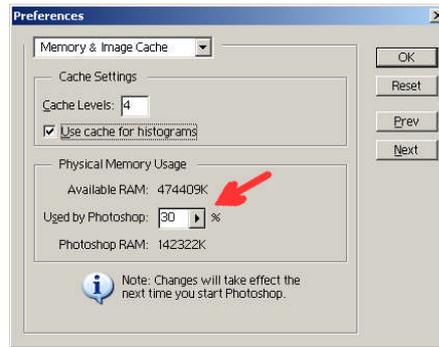
- It is advised to use the Leica Powered FireWire cable (p/n 12730049) for Leica DFC500 cameras.
- Firmware for the Leica DFC500 should be at least version 2.1.
- Shading now incorporates a White Balance. While a shading reference is active, it is not possible to make a separate White Balance or change the color balance.

7.4 Windows XP SP2 + 1394b

Windows XP Service Pack 2 introduced some problems with FireWire transmission, which affected live and captured images when using 1394b controllers (800Mb/s). As a result Microsoft has acknowledged a bug in the following communication:
<http://support.microsoft.com/kb/885222> A patch download is available from this page.

7.5 General Limitations

Some imaging programs may allocate too much memory for themselves so that Leica DFC Twain cannot run correctly. In this case increase the physical memory or reduce the memory requirement of the software. In Photoshop, for example, open the preferences menu and reduce the physical memory requirement until the Leica DFC Twain runs smoothly.



Do not use 16bit image modes if the host application cannot handle 16bit data. Only Leica-recommended imaging applications like LAS, IM, FW4000 and CW4000, and Adobe Photoshop and a few others take advantage of 16 bit image data.

If the RAM memory installed on your computer is less than the recommended size for Leica DFC cameras, the live image or image resizing or features may fail.

Leica DFC Twain starts in "memory" mode and not "native" memory mode.

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