



# Leica DFC425 / DFC425 C

**Digital Microscope cameras for Analysis and Documentation**

Living up to Life

**Leica**  
MICROSYSTEMS

# Fast and Easy Analysis and

## DFC425 / DFC425 C Highlights

- Live image control provides fast focusing and positioning of the sample.
- Quickly transfer images with standard FireWire 1394b interface for PCs.
- XGA (1024×768) progressive scan preview with up to 20 frames per second
- 5-megapixel CCD Bayer Array RGB filter produces brilliant pictures.
- Exposure times range from 1 msec to 60 sec (DFC425 C: to 600 sec).
- Features 36-bit RGB color depth
- Partial scan mode offers the fastest scanning of a freely defined area at full resolution
- Easily and quickly connects to all microscopes via a c-mount interface
- An intuitive user interface offers convenient image capture and processing functions
- Two-color LED displays operational status
- Ultra compact housing saves space.

## DFC425 C Highlights

- Peltier cooling for high dynamic range and minimum noise under low light
- 2×2 binning mode for increased brightness and faster frame rate in low light situations

## Stunning, High-Resolution Details

Excellent picture quality is essential for precise image analysis, documentation, and reporting. The Leica DFC425 and DFC425 C Digital Microscope Cameras provide detailed high-resolution pictures with outstanding accuracy and brilliant color reproduction. The exceptional picture quality and ease of use, makes these cameras the perfect choice for all analysis and documentation needs.

## Excellent Picture Quality

These cameras digitize the image information from the CCD chip directly in the camera head, which leads to excellent noise suppression and perfect acquisition of the unprocessed CCD signal. Digitization takes place with a resolution of 12 bits and Leica's true color calibration takes care of the natural color reproduction, which produces excellent picture quality.

## Compact Design

The camera's compact housing, specifically designed for microscopy applications, is easy to attach to the microscope. The camera is not much larger than a computer mouse and does not require an external power supply, which reduces workstation clutter.

## Easy to Use

Leica's digital technology simplifies all operations, from image capture through image archiving, and allows digital retouching and analysis. In addition, intelligent camera options allow you to conveniently set up the camera parameters. Leica cameras have automatic white balance and advanced illumination control and are thus ready to produce perfect images in seconds.



# Documentation

## High-performance Leica LAS software

The Leica Application Suite (LAS) software included in the scope of supply offers numerous functions for recording and retouching images. Beginners as well as experienced users can thus use the full potential of the digital technology. The captured images can be edited, analysed, archived and reproduced as often as you wish without any loss in quality. The TWAIN driver included in the delivery can be used to transfer photographs to other image editing programs without any problems.

## DFC425 C for Low-Light Applications

The DFC425 C allows crisp, sharp images to be created without noise, even under low illumination. Interfering thermal noise is effectively reduced with active cooling by means of a Peltier element. With the innovative, fast readout procedure, even high-resolution low light recording is now a reality.

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Leica M125 with Leica DFC425 C Digital Microscope Camera, LED Illumination, Trinocular Tube, SmartTouch™ and PC System with Leica LAS Software

# Leica DFC425 / DFC425 C – Technical Data

| <b>Digital Camera</b>             |  | <b>Leica DFC425 / DFC425 C</b>  |  |
|-----------------------------------|--|---|--|
| Camera type                       | Digital camera for microscopy with control software  |   |  |
| Sensor                            | Interline transfer frame readout CCD – ICX452  |   |  |
| Sensor Grade/Size                 | Grade Zero / 8.10 mm × 6.64 mm, Diagonal 8.93 mm (Type 1/1.8")   |   |  |
| Color Filter                      | RGB Bayer Mosaic   |   |  |
| Protective color Filter           | Hoya CM500 S (IR cut off 650 nm), removable  |   |  |
| Shutter control                   | Electronic global shutter / 3 frames interlaced readout  |   |  |
| Number of pixels / pixel size     | 5 Megapixel, 2592 × 1944 / 2.78 μm × 2.78 μm   |   |  |
| Color depth                       | 36 Bit   |   |  |
| A/D converter                     | 12 Bit   |   |  |
| Dynamic range                     | DFC425: > 57 dB / > 700:1 dB   | DFC425 C: > 58 dB / > 800:1 dB  |  |
| Exposure time                     | DFC425: 1 msec – 60 sec  | DFC425 C: 1msec – 600 sec   |  |
| Readout noise                     | σ < 6 LSB (12 Bit) typical   |   |  |
| Gain control/Offset control       | 10× / 0. 255 LSB (12 Bit)  |   |  |
| Shading correction                | Yes, stored for all formats  |   |  |
| Cooling                           | DFC425: not available  | DFC425 C: Δ –20° compared to ambient  |  |
| Region of interest                | Freely adjustable in 2 pixels steps from 2 × 2 up to full resolution   |   |  |
| <b>Image Formats</b>              | <b>Pixels</b>  | <b>Speed f.p.s., Fast / HQ</b>  |  |
| Interlaced large                  | 2592 × 1944  | 6/3   |  |
| Interlaced medium                 | 1728 × 1296  | 9/4.5   |  |
| Progressive large                 | 1024 × 768   | 18/9  |  |
| Progressive medium                | 864 × 648  | 20/10   |  |
| Progressive small                 | 576 × 432  | 40/20   |  |
| Modes                             | Formats in Fast (40MHz) or High Quality (20MHz) modes  |   |  |
| <b>Computer</b>                   | <b>Hardware</b>  | <b>Software</b>   |  |
| Min. computer configuration       | Pentium 4, 2.5 GHz, 1 GB RAM<br>24 bit graphics, 1024 × 768,<br>6-pin or 9-pin FireWire OHCI<br>or free PCI slot | Leica DFC Twain<br>Leica LAS Software<br>Windows Vista 32/64 bit<br>Windows XP prof. 32/64 bit, SP3 |  |
| <b>Interfaces</b>                 |  |   |  |
| Recommended video adapter         | c-mount 0.5× or 0.55×  |   |  |
| Data                              | Single cable FireWire – IEEE1394b – 9 pin, screw lock  |   |  |
| Digital Input connector           | Opto-decoupled trigger   |   |  |
| Digital Output connector          | Flash synch or readout active  |   |  |
| <b>Physical and Environmental</b> |  |   |  |
| Power consumption                 | DFC425: ~4 W   | DFC425 C: ~6 W  |  |
| Power supply                      | via FireWire cable   |   |  |
| Housing                           | Aluminum die cast  |   |  |
| Size                              | DFC425: 112 × 74 × 69 mm <sup>3</sup>  | DFC425 C: 132 × 74 × 69 mm <sup>3</sup>   |  |
| Weight                            | DFC425: 340 g  | DFC425 C: 495 g   |  |
| Operating temperature range       | +5 to +35 °C   |   |  |
| Relative humidity                 | 10 % .. 80 % non-condensing  |   |  |
| <b>Equipment Order Numbers</b>    |  |   |  |
| 12 730 221                        | Leica DFC425 camera kit comprising: Leica DFC425 Camera, Leica software, FireWire cable a–b                      |   |  |
| 12 730 222                        | Leica DFC425 C camera kit comprising: Leica DFC425 C Camera, Leica software, FireWire cable a–b                  |   |  |
| <b>Additional Items</b>           |  |   |  |
| 12 730 210                        | PCI-Express FireWire-b card for PCs without FireWire   |   |  |
| 12 447 066                        | Laptop PCMCIA FireWire-a interface card  |   |  |
| 12 730 186                        | FireWire-cable, 3m, b–b, 9/9-Pin   |   |  |
| 12 730 187                        | FireWire-cable, 3m, a–b, 6/9 Pin   |   |  |
| 12 730 188                        | FireWire Power kit comprising: 110/220V power supply, 4-pin FireWire-a or 6-pin FireWire-a adapter               |   |  |