Leica DFC450 & DFC450 C

Digital Microscope Cameras for Analysis and Documentation

Living up to Life

Leica DFC450 / DFC450 C highlights

- Fast (18fps) and large (1260×960 pixel) live image for fast focusing and positioning of the specimen.

- High quality 5-megapixel CCD for brilliant captured images.

- Wide range of exposure times to match all types of illuminations and contrast techniques.

- Freely defined region of interest for fastest live image update and precise focus position (ZoomFocus).

- Standard hardware interface for easy and quick connection to all microscopes (c-mount, FireWire-B).

- Powerful software and intuitive user interface for convenient image capture and processing functions.

- Complete camera kit with camera head, Firewire cables and Firewire PCexpress board for easy installation to PC.

Leica DFC450 C highlights

- Active peltier cooling for high dynamic range and minimum noise level in low light situations.

- Additional binning mode for increased brightness and faster frame rate in low light situations.

New grayscale modes

- Fast and ultrasharp grayscale modes for more details in delicate imaging situations (patented by Leica Microsystems).
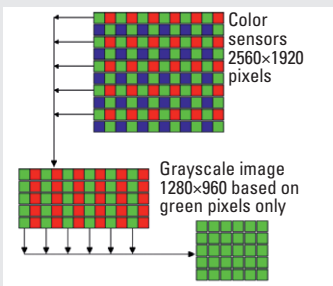
Stunning, high-resolution details

Excellent picture quality is essential for precise image analysis, documentation, and reporting. The Leica DFC450 and DFC450 C digital microscope cameras provide detailed high-resolution pictures with outstanding accuracy and brilliant color reproduction. The exceptional picture quality and ease of use, make 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 Microsystems' true color calibration takes care of the natural color reproduction, which produces excellent picture quality.
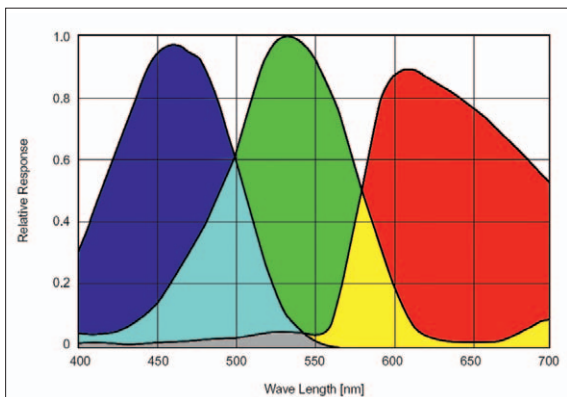
Quantum efficiency of Leica DFC450 camera (WB applied)

Easy to use

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

Color sensors 2560×1920 pixels

Grayscale image 1280×960 based on green pixels only

18 fps live

5 MPix

Small Housing

LAS included

Windows Support

Win7, Vista, WindowsXP

Documentation

High-performance Leica LAS software
The Leica Application Suite (LAS) software offers numerous functions for recording and combining images. Beginners as well as experienced users can benefit from the full potential of digital technology. The captured images can be edited, analyzed, archived, and reproduced as often as desired without any loss in quality. The TWAIN driver included in the delivery can be used to transfer photographs to other image editing programs that use this imaging standard for camera control.

Leica DFC450 C for low-light applications
The Leica DFC450 C allows crisp, sharp images to be created with minimum noise in low light situations. Interfering thermal noise is effectively reduced with active cooling by means of a Peltier cooling device. With the innovative, fast readout procedure, even high-resolution low light recording is now possible.

COOLED

Leica DM8000 M with Leica DFC450 digital microscope camera and PC system with Leica LAS software

FW B-B included	FireWire B interface	FW-B card included	Active Cooling* △ 20°	HDR support	Partial Scan ROI	RGB 12-bit	C-Mount interface

*DFC450 C only

Leica DFC450 / DFC450 C – Technical Data

Digital camera	Leica DFC450 / DFC450 C	
Camera type	Digital camera for microscopy with control software	
Sensor	Interline transfer frame readout CCD – ICX282	
Sensor size	8.7 × 6.5 mm, diagonal 11 mm (type 2/3")	
Color filter	RGB Bayer Mosaic	
Protective filter	Removable dust protection, UV/IR filter	
Shutter control	Electronic global shutter / 2 frames interlaced readout	
Number of pixels / pixel size	5 megapixel, 2560 × 1920 / 3.4 μm × 3.4 μm	
Color depth	36 Bit	
A/D converter	12 Bit	
Dynamic range	> 59 dB / > 900:1 dB	
Exposure Time	Leica DFC450: 1 msec – 60 sec	Leica DFC450 C: 1 msec – 600 sec
Readout noise	σ < 4.5 LSB (12 Bit) typical	
Gain control/offset control	10× / 0.. 255 LSB (12 Bit)	
Cooling	Leica DFC450: not available	Leica DFC450 C: Δ –20° compared to ambient
Region of interest	Freely adjustable in 2 pixels steps from 2 × 2 up to full resolution	

Image formats	Pixels	Speed f.p.s., fast / HQ
Full frame	2560 × 1920	9 fps / 4.5 fps
Color binning 2 × 2	1280 × 960	18 fps / 8.2 fps
Color binning 4 × 4 (only available for DFC450 C)	640 × 480	30 fps / 15 fps
Grayscale R,G,B	1280 × 960	18 fps / 9 fps
Modes	Formats in fast (50 Mhz) or high quality (25 Mhz) modes	

Computer	Hardware	Software
Min. computer configuration	Intel Core 2 Duo 2.4 GHz or faster 2 GB RAM, highres graphic card with 128 MB or 256 MB RAM, Direct X V9c or V10 FireWire-B port or free PCI-express slot	DFCTwain, Leica LAS software Windows 7 Prof. or Ultimate, 32 or 64-bit Windows Vista SP2, 32-bit only Windows XP, SP3, 32-bit only

Interfaces		
Recommended video adapter	C-mount 0.63× or 0.7×	
Data	Single cable FireWire – B-B, 9/9-Pin, screw lock	
Digital input connector	Opto-decoupled trigger	
Digital output connector	Flash synch or readout active	

Physical and environmental		
Power consumption	Leica DFC450: ~4 W	Leica DFC450 C: ~6 W
Power supply	via FireWire cable	
Housing	Aluminum die cast	
Size	Leica DFC450: 112 × 74 × 69 mm	Leica DFC450 C: 132 × 74 × 69 mm
Weight	Leica DFC450: 410 g	Leica DFC450 C: 490 g
Operating temperature range	+5 to +35 °C	
Relative humidity	10 % .. 80 % non-condensing	

Equipment order numbers	
12 730 411	Leica DFC450 camera kit, comprising: Leica DFC450 camera, LAS Software, FireWire cable b-b, PCI-express FireWire-b board
12 730 412	Leica DFC450 C camera kit, comprising: Leica DFC450 C camera, LAS Software, FireWire cable b-b, PCI-express FireWire-b board

Optional items	
12 730 210	PCI-Express FireWire-b card for PCs without FireWire (3 ports)
12 730 447	PCI-Express FireWire-b card for PCs without FireWire (2 ports) low profile
12 730 183	PCI-32 FireWire a+b+USB card for PCs without FireWire (5 ports)
12 447 066	FireWire-b notebook kit, comprising of PC express card (2 ports), power supply 100-240 V, FireWire-a-b adapter
12 730 186	FireWire-cable, 2.5 m, b-b, 9/9-Pin

www.leica-microsystems.com

Leica
MICROSYSTEMS