Leica DFC420

Digital FireWire Color Camera System for Analysis and Documentation

Leica
MICROSYSTEMS

Fast and Easy Analysis and Documentation

Excellent picture quality is essential for precise image analysis, documentation,and reporting. The Leica DFC420 Digital Camera system provides high-resolution pictures with outstanding detail accuracy and brilliant color reproduction. The Leica DFC420 is the cost-effective alternative to traditional film photography and analog video camera systems. Exceptional picture quality and ease of use make the Leica DFC420 the perfect choice for precise, fast imaging for documentation and analysis.

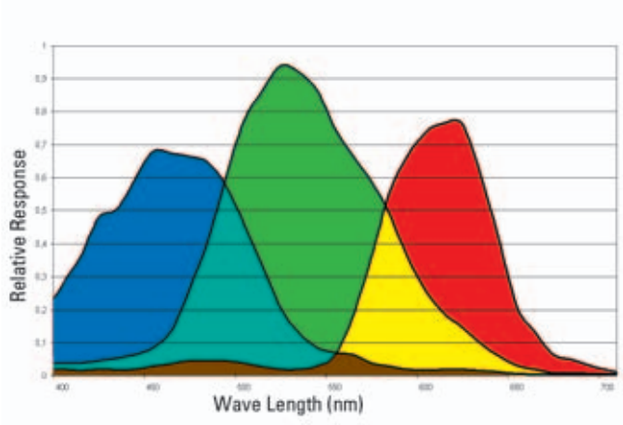
Stunning, High-Resolution Detail
The Leica DFC420 produces photographs that reveal the finest structures. The resulting high-quality, sharp images are absolutely true to color and free from noise effects.

Excellent Picture Quality
The Leica DFC420 is based on a 5-megapixel sensor with resolution up to 12.5 megapixels via Leica's advanced bicubic/interpolation algorithms. The camera's CCD signal is processed in a series of steps so that optimum signal quality is attained even before digitization occurs. The Leica DFC420 digitizes the image information from the CCD chip directly in the camera head. This leads to excellent noise suppression and perfect acquisition of the unprocessed CCD signal. Digitization takes place with a resolution of 12 bits. Leica's true color calibration takes care of the natural color reproduction, which produces excellent picture quality.

Live Image Control
The camera's real-time live preview speed allows a sample to be adjusted and focused directly on a computer monitor. Focusing can take place conveniently without having to re-adjust the microscope's eyepieces. This reduces the repetitive motion of looking back and forth from microscope eye tubes to the computer monitor.

Feature highlights

- Live image control provides fast focusing and positioning of the sample
- Provides 864 × 648 progressive scan previews of up to 15 frames per second
- 5-megapixel CCD Bayer Array RGB filter produces brilliant pictures
- Exposure times range from 0.2 milliseconds to 60 seconds
- 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
- Intuitive user interface offers convenient image capture and processing functions for PC and MAC
- Two-color LED displays operational status
- Ultra compact housing saves space
- Quickly transfer images with standard FireWire 1394a interface for PC and Mac



Compact Design
The camera's compact housing, specifically designed for microscopy applications, facilitates easy microscope attachment. 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
The Leica DFC420 makes imaging easy. The camera operates automatically, and shutter and filter changes can be done without disturbing the work at the microscope. Leica's digital technology simplifies all operations, from image capture through image archiving, and allows digital retouching and analysis. The camera is equipped with a C-Mount interface for the widest range of microscope applications.

Intuitive solutions for PCs and MACs
The camera's software makes digital recording on the screen quick and easy, using either a PC or MAC. The easy-to-use interface is specifically designed for microscopy applications. A variatiy of intuitive image capture and editing functions ensure that the recorded images are immediately available for viewing and further processing. This allows the user to take full advantage of all the benefits of modern digital technology.

Equipment components

Order numbers	
12 730 077	Leica DFC420 camera kit including: Leica DFC420 camera Leica DFC Twain Software for PC Leica Firecam Software for Mac Leica Application Suite Software for PC Leica IM50 Image Manager for PC 2m, 6 to 6 pin FireWire cable
12 447 053	OHCI FireWire PCI Card for PCs without FireWire interface
12 447 066	Laptop PCMCIA FireWire interface card
12 447 140	FireWire cable – 4m, 6 to 6 pin
12 730 049	FireWire power kit – FireWire cable and Power supply for use with 4-pin FireWire or Unpowered, 6-pin FireWire

Leica DM4000 M Microscope
with Leica DFC420 Digital Camera

Leica DFC420 – Technical Data

Digital Camera	**Leica DFC420**	
Camera type	Digital camera for microscopy with control software	
Sensor	Interline transfer frame readout CCD – ICX452	
Sensor Grade/Size	Grade Zero / 8.10mm × 6.64mm, Diagonal 8.93mm (Type 1/1.8")	
Color filter	RGB Bayer mosaic	
Protective color filter	IR cut-coating-filter on BK7	
Shutter control	Electronic global shutter / 3 frames interlaced readout	
Number of pixels	5 Megapixel, 2592 × 1944	
Sensitive area	7.19mm × 5.39mm	
Pixel size	2.78µm × 2.78µm	
Color depth	36 Bit	
A/D converter	12 Bit	
Dynamic range	> 57 dB / > 700:1 dB	
Readout noise	σ < 6 LSB (12 Bit) typical	
Exposure time	205 µsec – 60 sec	
Dark current	1.2 LSB/sec at 12 Bit typical	
Gain control/Offset control	10× / 0.. 255 LSB (12 Bit)	
Live image	On computer screen	
Shading correction	Yes, stored for all formats	
Brightness correction	available	
Cooling	not available	
Cooling temperatures	not available	
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 / full resolution	2592 × 1944	5 / 2.5
Full frame / medium resolution	1728 × 1296	7.5 / 3.7
Full frame / progressive scan	864 × 684	14.9 / 7.5
Full frame / small resolution	576 × 432	45 / 22
Modes	Formats in Fast (29.5MHz) or High Quality (14.75MHz) modes as indicated above, trigger or free running	
Computer	**PC**	**MAC**
Min. computer configuration	Pentium 4, 2GHz, 512MB RAM 24 Bit graphics, 1024 × 768, CD-ROM drive 4-pin or 6-pin FireWire OHCI or free PCI slot	G4 or G5, 512MB RAM CD-ROM drive
Supported operating systems	Windows 2000, Windows XP	MAC OS 10.3 or higher
Leica software	DFC Twain, LAS, Image Manager	Firecam
Interfaces		
Optical	C-Mount	
Recommended video adapter	0.5 or 0.55×	
Data	Single cable FireWire – IEEE1394a 6-pin	
Digital Input connector	Opto-decoupled trigger	
Digital Output connector	Flash synch or readout active	
Software trigger	Async trigger	
Operation status	Green / Yellow LED	
Physical and Environmental		
Power consumption	~4W	
Power supply	Via FireWire cable	
Housing	Aluminum die cast	
Size	112 × 74 × 69 mm³	
Weight	340g	
Operating temperature range	+5 to +35°C	
Relative humidity	10%..80% non-condensing	

Winner 2005

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