



Leica DFC320

Digital FireWire Color Camera System
For Analysis and Documentation

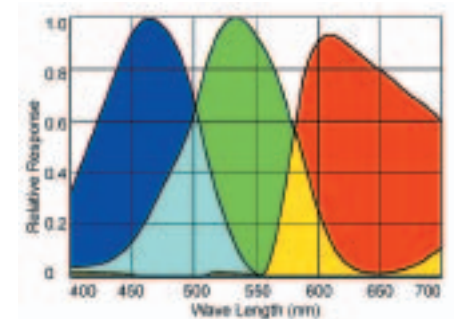
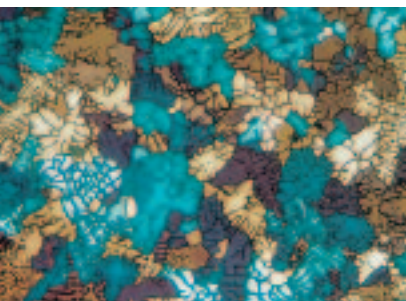
Leica
MICROSYSTEMS

Fast and Easy Analysis and Documentation

Excellent picture quality is an essential prerequisite for precise image analysis, documentation and reporting. The Leica DFC320 Digital Camera system provides high resolution pictures with high detail accuracy and brilliant reproduction. The Leica DFC320 is the cost effective alternative to traditional film photography and analog cameras. Exceptional picture quality and ease of use make the Leica DFC320 the perfect choice for precise, fast imaging.

Highlights

- Quick transfer for PC and MAC with standard FireWire
- Live image for fast focusing and positioning
- 3.3 Megapixel CCD with Bayer Array RGB filter for brilliant pictures
- Exposure times of 230 μ seconds to 60 seconds
- Up to 36 bit RGB color depth
- Partial Scan Mode: fastest scanning of a freely defined area at full resolution
- Simple and fast connection to all microscopes via C-Mount interface
- Intuitive user interface with convenient image capture and processing functions for PC and MAC



High Resolution Detail

The Leica DFC320 produces photographs that reveal the finest structures and provides images of the highest quality. The sharp images are absolutely true to color and free from noise effects.

Excellent Picture Quality

The Leica DFC320 digitizes the image information of the CCD chip in the camera head, leading to optimum noise suppression and perfect acquisition of the unprocessed CCD signal. The Leica DFC320 is based on a 3.3 megapixel sensor. The CCD signal on the camera is processed in a number of steps, so that an optimum signal quality can be attained before digitization occurs. 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 real-time live preview speed allows the sample to be adjusted and focused directly on a computer monitor without the need of the microscope eyepieces.

Easy to Use

The Leica DFC320 makes imaging work easy. The camera operates automatically and neither shutters nor filter changers impede the work at the microscope. The digital technology simplifies all operations, from image capture through image archiving, and opens up all the potential of digital retouching and analysis. The camera is equipped with a C-Mount interface for the widest range of microscope applications.

Compact Design

The compact housing, specially developed 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 clutter.

Intuitive Imaging Solutions for PC and MAC

The camera software makes digital display on the screen quick and easy. The Leica DFC320 is PC or MAC compatible and is easy to operate using an interface specially designed for microscopy applications. Numerous image capture and editing functions ensure immediate availability of high quality recorded images for viewing and processing. This offers optimum quality and the full benefits of digital technology.

Equipment components

Order numbers

12730041	Leica DFC320 camera kit including: Leica DFC320 camera Leica DFC Twain Software for PC Leica Firecam Software for Mac Leica IM50 Image Manager for PC 2m, 6 to 6 pin FireWire cable
12447053	OHCI FireWire PCI Card for PCs without FireWire interface
12447066	Laptop PCMCIA FireWire interface card
12447140	FireWire cable – 4m, 6 to 6 pin
12730049	Laptop power kit – Power supply for use with 4-pin FireWire or Unpowered, 6-pin FireWire



The Leica DM LS Microscope with
Leica DFC320 Digital Camera.



Technical Data: Leica DFC320

Digital camera		Leica DFC320 (R2)	
Camera type	Digital camera for microscopy with control software		
Sensor	Interline transfer frame readout CCD – ICX252AQ		
Sensor Grade/Size	Grade Zero / 8.10mm × 6.64mm, Diagonal 8.93mm (Type 1/1.8)		
Color filter	RGB Bayer mosaic		
Protective color filter	Hoya CM500S (IR cut-off 650nm)		
Shutter control	Electronic global shutter/interlaced readout		
Number of pixels	3.3 Mpixel, 2088 × 1550		
Max scaled resolution (PC only)	7.3 Mpixel, 3132 × 2325		
Sensitive area	7.2 mm × 5.35 mm		
Pixel size	3.45 μm × 3.45 μm		
Color depth	36 Bit		
A/D converter	12 Bit		
Dynamic range	> 59 dB		
Readout noise	σ < 5.0 LSB (12 Bit) typical		
Exposure time	230 μsec - 60 sec		
Dark current	1.2 LSB/sec at 12 Bit typical		
Quantum efficiency	Relative: Blue 465nm 98%; Green 530nm 100%; Red 610nm 94%		
Gain control/Offset control	10× / 0.. 255 LSB (12 Bit)		
Live image	On computer screen		
Shading correction	Yes, stored for all formats		
Brightness correction	On all color binning modes		
Cooling	NA		
Cooling temperatures	NA		
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 color or mono	2088 × 1550	5/2.5	
2 × 2 Binning color or mono	1044 × 772	10/5	
3 × 3 Binning color or mono	696 × 514	15/7.5	
4 × 4 Binning color or mono	520 × 384	20/10	
Progressive sub-sample	696 × 516	33/NA	
Progressive R or G or B mono	1044 × 775	10/5	
Modes	Formats in Fast (20MHz) or High Quality (10MHz) 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 X	
Software	Leica DFC Twain Leica Image Manager	Leica Firecam	
Interfaces			
Optical	C-Mount		
Recommended video adapter	0.63×		
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		
Physical and environmental			
Power consumption	~4 W		
Power supply	Via FireWire cable		
Housing	Aluminum die cast		
Size	112 × 74 × 69 mm ³		
Weight	340g		
Operating temperature range	+5 - +35°C		
Relative humidity	10%..80% non condensing		

Leica Microsystems Imaging Solutions Ltd
PO Box 86, 515 Coldhams Lane
Cambridge CB1 3XJ
United Kingdom

Tel: +44 1223 411101
Fax: +44 1223 412526
Email: imaging.marketing@leica-microsystems.com
URL: www.microscopy-imaging.com

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