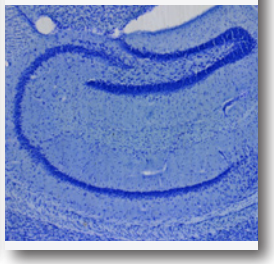
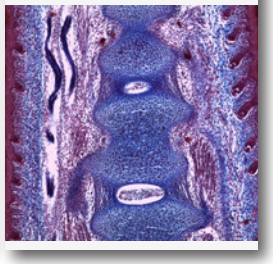
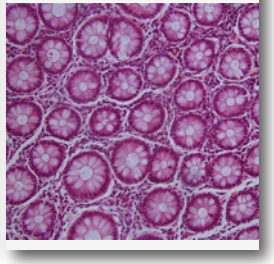
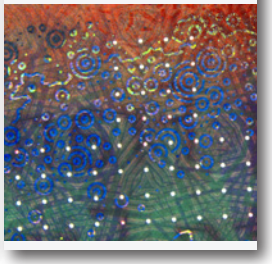
BRIGHTFIELD DOCUMENTATION CAMERAS

	Leica EC4 Introductory CMOS camera	Leica IC90 E/ICC50 E/ICC50 W Integrated HD CMOS cameras	Leica MC170 HD/MC190 HD HD CMOS cameras	Leica DMC2900 High-Speed CMOS camera	Leica DMC4500/DFC450 C Color CCD cameras	Leica DMC5400 High-Resolution CMOS camera
Performance	BF Cost effective color documentation camera to complement educational microscope systems. It acquires 3.3 MP color images and can be connected via USB 2.0 to PC and Mac for subsequent basic annotations and measurements.	HD BF All cameras can be seamlessly integrated with either compound or stereo microscope systems. All of them generate HD color images, which can be displayed directly on a monitor. The Leica ICC50 W features in addition Wi-Fi and the Leica ICC50 E/IC90 E Ethernet capabilities.	HD BF These cameras deliver fast HD live images, which can be directly displayed on a monitor or stored on a memory card. The acquisition is controlled via handheld remote control unit or application software.	BF Fast CMOS camera with excellent color fidelity and fast live imaging. With extended camera settings and features such as a look-up table, gain, etc., this camera thus accommodates demanding microscope brightfield techniques.	BF The Leica DMC4500 and the cooled DFC450 C are capable of acquiring color images at the quality level of a CCD sensor. Also features various binning modes and automatic brightness correction.	HD BF This high-resolution color camera offers HD images in 4k resolution with high frame rate even at low magnification. True-color calibration provides natural color reproduction. The camera has a USB 3.0 interface.
Sensor	3.3 MP CMOS Pixel size 3.2 x 3.2 µm 2112 x 1584 pixels 8 bit A/D converter 24 fps (1600 × 1200 Pixel)	10 MP/5.0 MP CMOS Pixel size 1.7 x 1.7/2.3 x 2.3 µm 3648 x 2736/2592 x 1944 pixels 8 bit A/D converter 38 fps (HDMI 1280 x 760) IC90 E 28 fps (640 x 480) 12 fps (1440 x 1080)	5.0 MP/10.0 MP CMOS Pixel size 2.4 x 2.4/1.7 x 1.7 µm 3648 × 3648/2592 x 1944 pixels 10 bit A/D converter 30 fps (HDMI 1920 x 1080) 10 fps (PC 1600 x 1200)	3.1 MP CMOS Pixel size 3.2 x 3.2 µm 2048 x 1536 pixels 10 bit A/D converter 12 fps (full frame) 30 fps (2 x 2 binning)	5.0 MP CCD Pixel size 3.4 x 3.4 µm 2560 x 1920 pixels 14 bit A/D converter 9 fps (full frame) 18 fps (2 x 2 binning)	20.5 MP CMOS sensor Pixel size 2.4 x 2.4 µm 5472 x 3648 pixels 3 x 12 bit A/D converter 7 fps (full frame) 32 fps (3 x 3 binning)
Application	Matching the requirements for **basic documentation** of brightfield and phase contrast specimens with basic annotation and measurement tools.	Ideal cameras when both – moderate resolution documentation and **fast live display** on a monitor are needed.	Developed for **high speed live display** of stained specimens or macroscopic model organisms for educational purposes or group consultations in pathology departments.	Suited for **good color documentation** of brightfield, phase contrast, and DIC techniques. It is the camera of choice for fast brightfield documentation in combination with a dedicated fluorescence camera.	Dedicated camera for **excellent color documentation** at high resolution, e.g. in combination with tile scanning of a large specimen. Accommodates all brightfield contrast methods. Ideal for later image analysis and measurements.	Ideally suited for the **documentation**, **evaluation**, and **analysis** of industry or life science research samples. Save all information in just one high quality image. Capture images with high dynamic range for a maximum of detail in light, as well as dark areas.
Image Example	Daphnia	Wing of a butterfly (*Charaxes zingha*)	Hippocampus, mouse	Examination of tissue sample (H&E staining)	Intestine, cross-section	Swiss Banknote



LEICA MICROSYSTEMS' CAMERA PORTFOLIO FOR LIFE SCIENCES

A perfect match to your application

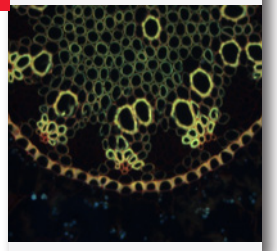
Key success factors:

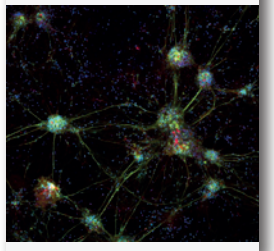
- Leica color cameras provide outstanding color fidelity due to state-of-the-art color interpolation algorithms performed in the camera head
- Even fine structural and color details can be distinguished due to appropriate pixel sizes for every desired microscope magnification
- High-Definition (HD) display directly on a monitor allows discussion of findings with a large auditorium

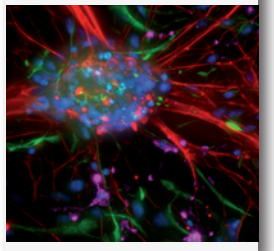
Color camera
HD High-Definition camera
BF All contrast methods (except fluorescence)
FL Dedicated fluorescence camera

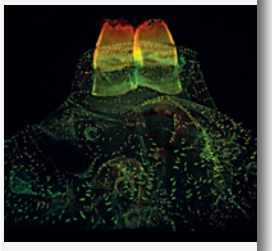
HIGHEST SENSITIVITY: FLUORESCENCE DOCUMENTATION CAMERAS

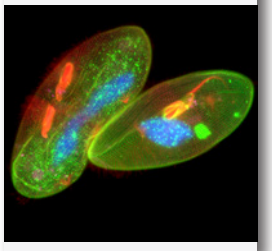
	Leica DMC6200	Leica DFC7000 T	Leica DFC3000 G	Leica DFC7000 GT	Leica DFC9000 GT/GTC
Camera	Pixel Shift Camera	CCD Microscope Color Camera	CCD microscope camera	CCD Microscope Camera	sCMOS Microscope Camera
Performance	HD BF FL	BF FL	FL	FL	FL
	The DMC6200 provides super fast image acquisition and delivers precise color information in every pixel. Even the most subtle color differences are detected through multiple sampling. The camera features a state-of-the-art Sony Exmor CMOS sensor.	The Leica DFC7000 T is based on the newest generation of Sony EXview HAD II™ sensor technology which combines high-resolution with high-sensitivity. Users can obtain fluorescence and brightfield images with one camera.	Passively cooled fluorescence camera with effectively reduced background noise. Camera can be high-speed triggered.	High-sensitivity camera based on the newest generation of Sony EXview HAD II™ sensors which combine high-resolution with high sensitivity. Features high speed triggering and regulated sensor cooling.	Deeply cooled sCMOS camera with a combination of high QE_{max} (82 %), extreme low noise, high dynamic range, large sensor (19 mm), and high-speed acquisition
Sensor	2.3 - 20.7 MP CCD Pixel size 5.86 x 5.86 µm 1920 x 1200 – 5760 x 3600 pixels 3 x 16 bit 30 fps (1920 x 1200)	2.8 MP CCD Pixel size 4.54 x 4.54 µm 1920 x 1440 pixels 8/12 bit with 16 bit A/D converter 40 fps (full frame) 123 fps (5 x 5 binning)	1.3 MP CCD Pixel size 3.75 x 3.75 µm 1296 x 966 pixels 14 bit A/D converter 31 fps (full frame) 54 fps (2 x 2 binning)	2.8 MP CCD Pixel size 4.54 x 4.54 µm 1920 x 1440 pixels 8/12 bit with 16 bit A/D converter 40 fps (full frame) 123 fps (5 x 5 binning)	4.2 MP sCMOS Pixel size 6.5 x 6.5 µm 2048 x 2048 pixels 12/ 16 bit 50 fps (GT) /90 fps (GTC) ~165 fps (1048 x 1048)
Application	Flexible color camera for **ultra-high resolution brightfield** documentation with unsurpassed color fidelity and **good fluorescence documentation** of immunostained specimen.	**Cooled color** fluorescence camera for **excellent brightfield** and **fluorescence** documentation. Specialty: **simultaneous multi-color** fluorescence imaging of fixed samples.	Monochrome camera for basic **fluorescence** applications such as **documentation** of fixed, **immunostained cells** and tissues.	Versatile **cooled** monochrome **high-sensitivity** camera for fluorescence documentation and standard live cell imaging of **FP-expressing cells** and tissues.	**Deeply cooled** monochrome fluorescence camera for advanced applications like **high-speed live cell imaging**, **FRAP**, and **ratio measurement** with amazing image quality.
Image Example	Convallaria	Cultured cortical neuronal cells (mouse).	Neuronal cells (mouse).	*D. melanogaster* larva. Sample: Courtesy of Prof. Stephan Sigrist, Freie Universität Berlin, Germany.	Paramecium











Key success factors:

- High-sensitivity of the sensor allows short exposure times and therefore prevents photo bleaching and actively protects the cells from any photo damage
- Cooling of the camera reduces unwanted noise and generates crystal clear fluorescence signals against dark background
- Hardware-triggering and overlapping mode of read-out allows high-speed, real-time live cell imaging

Color camera
Monochrome camera
HD High-Definition camera
BF All contrast methods (except fluorescence)
FL Dedicated fluorescence camera