

Specifications

Microscopes	Microscope stand	Options
	Upright	Leica DM5000 CS
		Leica DM6000 CS
		Leica DM6000 CFS
	Inverted	Leica DMI6000 CS
Leica DMI6000 CEL		
Leica DMI6000 AFC CS		
Vibration isolation	Isolation options	Specifications
	Anti-vibration table	Yes
Microscope stage	Stage options	Specifications
	Autofocus	Optional, for Leica DMI6000 CS
	Motorfocus (stand)	Travel range depending on mechanics of microscope/ 15 nm step size
	Z-Galvonometer	Selectable z-modes (Galvo Flow/discrete steps) available, 1500 µm/3nm step size
Continuous wave lasers	Laser type	Specifications
	VIS	Solid state laser 40 mW: 448 nm
		Solid state laser 20 mW: 488 nm
		Solid state laser 20 mW: 514 nm
		Solid state laser 20 mW: 552 nm
		Solid state laser 30 mW: 638 nm
		Diode 40 mW: 442 nm
		Ar 65 mW: 458, 476, 488, 496, 514 nm
		HeNe, 2 mW: 594 nm
		HeNe, 10 mW: 633 nm
		DPSS, 20 mW: 561 nm
	UV	UV OPSL 80 mW: 355 nm
		Diode, 50 mW: 405 nm
Pulsed lasers	Laser type	Specifications
	IR	Power & tuning range depending on selected model. Full integration of Coherent Chameleon and Newport MaiTai lasers with and without precompensation, compact OPO for gap free tuning up to 1300 nm.
	CARS laser picoEmerald	OPO, > 600 mW @ 780 nm to 940 nm, pulse width 5 to 6 ps, 80 MHz; Pump, > 750 mW @ 1064 nm, pulse length 7 ps, 80 MHz
	VIS	WLL, avg. power 1.5 mW: 470 – 670 nm, 78 MHz; with integrated pulse picker: 78, 39, 19.5, 9.75 MHz
		Diode, 3 mW: 640 nm; 40, 20, 10, 5 MHz
		Diode, 3 mW: 470 nm; 40, 20, 10, 5 MHz
		Diode, 3 mW: 440 nm; 40, 20, 10, 5 MHz
	UV	Diode, 3 mW: 405 nm; 40, 20, 10, 5 MHz
Super-resolution	STED CW	Sub 80 nm FWHM lateral resolution
	gated STED	Sub 50 nm FWHM lateral resolution

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Excitation modulation	Modulation type	Specifications
	AOTF VIS	Up to 8 channels
	AOTF UV	Up to 3 channels
	EOM IR	Yes
	AOTF CARS	Up to 2 channels
	Pulsed laser driver	Optional
	Direct modulation	For 405 nm
Optics	Number of laser ports	Up to 4 (UV-VIS-IR-STED)
	Number of VIS lasers	Up to 8 channels
	Excitation - emission splitting	Acousto-Optical Beam Splitter (AOBS) or Low Incident Angle dichroic beam splitters (LIAchroics)
	Detection range	400 – 800 nm
	UV and IR imaging	Sequential (line/frame) or simultaneous
	Field upgradable	Yes (most options, e.g. STED, multiphoton)
	UV correction	Unified concept with CS2 optics
	Pinhole	Stable single pinhole (maintenance-free)
	Pinhole-diameter control	Motorized by software, wavelength-dependent automatic mode available
	Notch filters	Fluorifier disk with numerous options
Scanners	Scanner design	Specifications
	Scanning concept	X2Y-scanner with optically correct scanning at low inertia
	Switch FOV-scanner-resonant scanner	FOV and resonant scanner in one system (opt)
	Field-of-view scanner	Specifications
	Maximal line frequency	3600 Hz (bidirectional)
	Minimal line frequency	1 Hz
	Maximal frame rate 512 x 512	7 Hz
	Maximal frame rate 512 x 16	84 Hz
	Beam park	Yes
	Maximal frame resolution	8192 x 8192 (FLIM: up to 512x512)
	Scan zoom	0.75 – 48x
	Panning	Yes
	Field rotation	200° optical
	Field diameter	22 mm

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Scanners	Resonant scanner 8kHz	Specifications
	Maximal line frequency	16 kHz (bidirectional)
	Minimal line frequency	8 kHz
	Maximal frame rate 512 x 512	28 fps
	Maximal frame rate 512 x 16	290 fps
	Maximal frame resolution	1024 x 1024 pixel
	Scan zoom	1,3 – 48x
	Panning	Yes
	Field rotation	200° optical
	Field diameter	13 mm
Scan modes	Scan options	Available
	xyz	Yes
	xzy	Yes
	xt	Yes
	xyt	Yes
	xzt	Yes
	xyzt	Yes
	xzyt	Yes
	xyλ	Yes
	xzλ	Yes
	xyλt	Yes
	xzλt	Yes
	xyλz	Yes
	xyzλt	Yes
	xyΛ	White Light Laser only
	xzΛ	White Light Laser only
	xyzΛ	White Light Laser only
	xyΛt	White Light Laser only
	xyλΛ	White Light Laser only
	xzλΛ	White Light Laser only

Specifications

Internal confocal detection	Hybrid detection	Specifications
Emission separation		Highly sensitive prism spectral detector (HyD SP) or filter cube (HyD RLD)
Time gated detection		Yes
Maximum number of detectors		4 (+ 1 PMT)
Tunability of emission bands		Yes
Spectral detection range		400 – 720 nm
Typical quantum efficiency		45% (@500 nm)
Tuning steps of emission bands		1 nm
Minimal detection range		5 nm
Photon counting		Yes
FLIM capabilities		Yes
Sensors		GsAsP hybrid detectors
Digitization		12 or 18 bit per channel
Read out frequency (dig oversampling)		> 600 MHz
Max gray resolution		16 bit
PMT detection for Imaging		Specifications
Emission separation		Highly sensitive prism spectral detector
Maximum number of detectors		Up to 5
Tunability of emission bands		Yes
Spectral detection range		400 – 800 nm
Quantum efficiency		30% (@ 500 nm)
Tuning steps of emission bands		1nm
Minimal detection range		5 nm
Sensors		High sensitive low noise, selected PMT
Digitization		12 or 18 bit per channel
Read out frequency		40 MHz oversampling
Max gray resolution		16 bit
PMT detection for FLIM and Imaging		Specifications
Emission separation		Highly sensitive prism spectral detector
Maximum number of detectors		Up to 2 (+ up to 3 additional internal detectors)
Tunability of emission bands		Yes
Spectral detection range		400 – 800 nm
Tuning steps of emission bands		1 nm
Minimal detection range		5 nm
Photon counting		Yes
FLIM capabilities		yes
Sensors		Fast time response
Digitization		12 or 18 bit per channel
Read out frequency		40 MHz oversampling
Max gray resolution		16 bit

Specifications

External confocal detection	Detector types	Applications
	PE APDs	2, for FCS and imaging
	MPD APDs	2, for FCS, FLCS, FLIM and imaging
	PMT	1, for FLIM
Non-confocal detection	Detection types	For Imaging
	Transmitted light detector	Optional, allowing BF, Ph, etc.)
	Non-descanned transmitted light channels	Up to 4 (multiphoton)
	Non-descanned reflected light channels	Up to 4 (multiphoton)
	Non-descanned reflected light HyD detection	Up to 2 (multiphoton), for imaging and FLIM
	Maximum number of detectors	6 NDDs, 1 BF-TLD
Electronics	Devices	For Imaging
	Scanner control	Digital (FPGA, field programmable gate arrays)
	Trigger in/out	Yes
	Auxiliary data input channels	Up to 2
	Computer	Premium HP workstation for real 64 bit processing
	Monitor	30" high brilliance monitor
	Software control	Programmable control panel with LCD function and value display
Extensions	Devices	For Imaging
	Auxiliary emission port	Optional
	Environmental control	Various options and accessories
Software	Ergonomy	GUI optimized for dark rooms and image processing
		Scalable user interface for maximum flexibility
		Fully modular and flexible arrangement of functions
	Image acquisition	Multidimensional acquisition, full control of motorized hardware
	Mosaicking/Stitching	Algorithm-based stitching functionalities
	Online dye separation	Fast online dye separation for VIS and MP imaging
	Photon statistics	Read out of photon counts (HyD)
	LAS AF Deconvolution	Fully integrated deconvolution algorithms, all parameters are automatically taken from the experiment
	Leica HCS A	For multiparametric screening applications
	LAS AF 3D Visualization	Fast, GPU-based processing of large 3D stacks, unique clipping tool
	Intuitive software wizards	
	LAS AF MicroLab	FRAP, FLIP, photoconversion, FRET (acceptor photobleaching, sensitized emission)
	LAS AF Live Data Mode	Recording of manual and automated workflows, trigger functions, complex timelapse series
	LAS AF Electrophysiology	Live Data Mode combined with the recording of electrical data
	LAS AF SMD FLIM	Setup and processing of FLIM measurement series using integrated SMD components
LAS AF SMD FCS	Setup and processing of FCS measurement series using integrated SMD components	