Specifications

FLUOVIEW FV3000 Laser Confocal Microscope Specifications

		FV3000	FV3000RS
Laser Light	Violet/Visible Light Laser	405 nm: 50 mW, 488 nm: 20 mW, 561 nm: 20 mW, 640 nm: 40 mW One optional laser port for sub laser combiner or optional laser unit	
Optional Laser	Sub Laser Combiner	Laser as follows (max. 3 laser units) 445 nm: 75 mW, 514 nm: 40 mW, 594 nm: 20 mW, connected to main laser combiner	
	Single Laser Unit	445 nm: 75 mW, 514 nm: 40 mW, or 594 nm: 20 mW, directly connected to main laser combiner	
Laser Light Control		Main laser combiner with implemented AOTF system, ultra-fast intensity modulation with individual laser lines, additional continuously variable shutter control (0.1%–100%, 0.1% increments) 10% or 100% maximum laser power changer by ND filter	
Scanner	Scanning Method	2 silver-coated galvanometer scanning mirrors	2 silver-coated galvanometer scanning mirrors 1 silver-coated resonant and 1 silver-coated galvanometer scanning mirrors
	Galvanometer Scanner (Normal Imaging)	Scanning Resolution: 64 × 64 to 4096 × 4096 pixels Scanning Speed (One Way): 512 × 512 with 1.1 s – 264 s. pixel time : 2 µs – 1000 µs Scanning Speed (Round Trip): 512 × 512 with 63 ms - 250 ms / 256 × 256 with 16 ms - 125 ms Optical Zoom: 1X – 50X in 0.01X increments Scan Rotation: Free rotation (360 degrees) in steps of 0.1 degree Scanning Mode: PT, XT, XZ, XY, XZT, XYT, XYZ, XYλ, XYZT, XYλT, XYλZ, XYλZT ROI scanning, rectangle clip, ellipse, polygon, free area, line, free line, and point; tornado mode only for stimulation	
	Resonant Scanner (High-Speed Imaging)	–	Scanning Resolution: 512 × 32 to 512 × 512 pixels Scanning Speed: 30 fps at 512 × 512, 438 fps at 512 × 32 Optical Zoom: 1X – 8X in 0.01X increments Scanning Mode: XT, XZ, XY, XZT, XYT, XYZ, XYλ, XYZT, XYλT, XYZ, XYλZT ROI Scanning, Rectangle Clip, Line
	Pinhole	Single motorized pinhole, pinhole diameter ø50 – 800 µm (1 µm steps)	
	Field Number (FN)	18	
	Dichromatic Mirror Turret	8 positions (high-performance DMs and 10/90 mirror)	
	Optional Unit for Scanner	Laser power monitor, optional laser port	
High Sensitivity-Spectral Detector	Detector Module	Cooled GaAsP photomultiplier, 2 channels	
	Spectral Method	Motorized Volume Phase Holographic transmission diffraction grating, motorized adjustable slit, selectable wavelength bandwidth: 1–100 nm, wavelength resolution: 2 nm	
	Dichromatic Mirror Turret	8 positions (high-performance DMs and mirror)	
Spectral Detector	Detector Module	Multi-Alkali photomultiplier, 2 channels	
	Spectral Method	Motorized Volume Phase Holographic transmission diffraction grating, motorized adjustable slit selectable wavelength bandwidth: 1–100 nm, wavelength resolution: 2 nm	
	Dichromatic Mirror Turret	8 positions (high-performance DMs and mirror)	
System Control	Control Unit	OS: Windows 7 Professional 64-bit (English version), Windows 10 Professional 64-bit built-in dedicated I/F board and hardware sequencer for precise imaging timing	
	Display	30 or 32-inch monitor (WQUXGA 2560 × 1600)	
Fluorescence Illumination Unit		External fluorescence light source, fiber adapter to optical port of scan unit, motorized switching between LSM light path and fluorescence illumination	
Transmitted Light Detector Unit		Module with integrated external transmitted light photomultiplier detector and LED lamp, motorized switching	

Microscope

	Inverted frame	Upright frame (for imaging)	Upright frame (for electrophysiology)
Microscope Frame	Motorized inverted microscope IX83 (IX83P2ZF)	Motorized fixed stage upright microscope BX63L	
Revolving Nosepiece	Motorized sextuple revolving nosepiece	Motorized septuple revolving nosepiece	Coded swing nosepiece Coded slider nosepiece
Condenser	Motorized long working distance condenser	Motorized luniversal condenser	Motorized long working distance condenser
Focus Stroke	Built-in motorized nosepiece focus Stroke: minimum increment: 0.01 µm		

Software

Basic Features	GUI designed for darkroom environment. User-arrangeable layout. Acquisition parameter reload features. Hard disk recording capability, adjust laser power and HV with Z-stack acquisition. Z-stack with alpha blending, maximum-intensity projection, iso-surface rendering.
2D Image Display	Each image display: single-channel side-by-side, merge, cropping, live tiling, series (Z/T/λ), LUT: individual color setting, pseudo-color, comment: graphic and text input
3D Visualization and Observation	Interactive volume rendering: volume rendering display, projection display, animation display. 3D animation (maximum intensity projection method, α blending) 3D and 2D sequential operation function
Image Format	OIR image format 8/16-bit gray scale/index color, 24/ 32/ 48-bit color, JPEG/ BMP/ TIFF image functions, Olympus multi-tif format
Spectral Unmixing	Fluorescence spectral unmixing modes (up to 16 channels)
Image Analysis	Region and line measurements, Intensity plot over time/Z, Colocalization analysis
Statistical Processing	2D data histogram display
Optional Software	Motorized-stage control / Mapping and multipoint stimulation / Sequence manager / Virtual channel acquisition / Microplate navigation / Remote development kit / Super resolution imaging (FV-OSR) / Digital camera control function / Deconvolution / FRET&FRAP analysis / Automatic object measurement and classification / Object tracking