

Nikon CSU-W1

Versatile spinning disk confocal microscope equipped with seven excitation lasers, epifluorescence LED light source, and two back-illuminated sCMOS cameras. The microscope is equipped by stage-top heating/cooling incubator for live cell and tissue imaging and a FRAP/photoactivation module. It is based on an inverted widefield microscope Nikon Eclipse Ti2 equipped with motorized XY stage, Perfect Focus System, semi-motorized DIC, LED transmitted light source, multicolor LED for wide-field epifluorescence, piezo stage for fast z-stack acquisition, and automatic water dispenser for long term imaging.

Applications

- Fast multicolor confocal imaging
- Various measurement options: z-stack, time series, tile scan, multi positions
- Brightfield and DIC microscopy
- FRET imaging

Specifications

Software	NIS-Elements
Spinning disk module	Yokogawa CSU-W1
Pinhole size (dual disk)	25 μm 50 μm
Laser excitation wavelengths (all CW)	405 nm 445 nm 488 nm 515 nm 561 nm 594 nm 640 nm
Dichroic mirrors (spinning disk module)	quad-band dichroic mirror 405/488/561/638 nm triple-band dichroic mirror 445/514/594 nm
Image splitting mirrors (spinning disk module)	561 nm long-pass dichroic mirror (DM A561LP) 514 nm long-pass dichroic mirror (DM A514LP) empty position for single camera acquisition
Filter cubes (microscope)	DAPI/FITC/TRITC/Cy5 CFP/YFP/mCherry FITC TRITC
Emission filters	455/50, 480/40m, 525/50, 545/40, 600/50, 645/75, 690/50, 720/60, 455/50, 480/40, 525/50, 545/40, 440/521/607/700 nm quad-band bandpass filter, 475/543/702 nm triple-band bandpass filter, Dual Line Emitter 405 / 488

Objectives	Magn.	Immersion	N.A.	WD [mm]	
	10x	air	0.45	4	CFI Plan Apo Lambda 10X
	20x	air	0.75	1	CFI Plan Apo VC 20x
	25x	silicone oil	1.05	0.55	CFI Plan Apo Lambda S 25XC Sil
	60x	water	1.2	0.31-0.28	CF Plan Apo VC 60XC WI
	100x	silicone oil	1.35	0.31-0.28	CFI SR HP Plan Apo Lambda S 100XC Sil
	100x	oil	1.4	0.13	CFI Plan Apo VC 100X Oil
Epifluorescence source	CoolLED pE-4000 (365, 385, 405, 435, 460, 470, 490, 500, 525, 550, 580, 595, 635, 660, 740, and 770 nm)				
Tube lenses	1x				
	1.5x				
Relay lens magnification	1x, 2x, motorized changer				
Camera (2x)	PRIME BSI (Teledyne Photometrics)				
	– 2048 x 2048 pixels				
	– pixel size: 6.5 x 6.5 μm				
	– 63 fps @ 2048 x 2048 pixels, 11-bit data				
	– $\text{QE}_{\text{max}} > 95\%$				