

Nanoimager

Technical specifications



ONi

Imaging and Analysis

IMAGING MODALITIES	Single-molecule imaging localization microscopy	
	Förster resonance energy transfer (FRET) spectroscopy	
	Single-molecule tracking	
	Epi / HILO / TIRF illumination	
ACHIEVABLE RESOLUTION	exceeding 20 nm	
SIMULTANEOUS IMAGING	2 channels (<10 nm channel mapping accuracy)	1 channel (2 optional)
NUMBER OF IMAGING COLORS	Up to 4 lasers	Up to 2 lasers
FIELD OF VIEW	50 µm x 80 µm per channel	
SOFTWARE FEATURES	Z-stack, time-lapse acquisition, laser program	
	Real-time localization analysis and rendering	
	FRET trace analysis	
	Residual drift correction	
	Scripting interface	
ACQUISITION SPEED	100 fps full frame	
	2500 fps with frame height cropped to 2%	

Operational

FOCUS SYSTEM	Manual Z-reference selection	
	One-shot autofocus	
	Continuous autofocus	
MECHANICAL STABILITY	<1 µm/K drift	
	<1 nm vibration amplitude (1 Hz to 500 Hz)	
ILLUMINATION MODES	Closed-loop, continuous illumination angle adjustment between epi-illumination and total internal reflection	
	Closed-loop adjustments of laser power density at sample plane	
TEMPERATURE CONTROL	Resistive heating, whole instrument (for live cell imaging)	
ENVIRONMENTAL CONDITIONS	Sensor array (temperature, humidity, acceleration)	

Hardware

DIMENSIONS W X D X H	Microscope: 21 cm x 21 cm x 15 cm	
	Light engine: 21 cm x 42 cm x 45 cm	Light engine: 21 cm x 42 cm x 24 cm
CAMERA	sCMOS	
	82 % peak QE	82% peak QE
	1.5 electrons rms read noise at standard scan	2.3 electrons rms read noise at standard scan
OBJECTIVE	100x, 1.4NA, oil immersion (standard)	
	100x, 1.4NA or 1.49NA, water or silicone immersion (optional)	
	20x, 40x, 60x and others upon request (optional)	
LASER OPTIONS	Violet: 405 nm (150 mW or 1000 mW)	
	Blue: 473 nm (300 mW or 1000 mW), 488 nm (200 mW or 1000 mW)	
	Green: 532 nm (300 mW or 1000 mW), 561 nm (200 mW or 500 mW)	
	Red: 640 nm (300 mW or 1000 mW)	
	Near infrared: 720 nm (1200 mW)	
LASER TYPES	DPSS and diode	
OTHER LIGHT SOURCES	LED for bright-field imaging	
	NIR auto-focus laser	
SAMPLE STAGE	20/20/10 mm XYZ travel range, closed-loop piezo stage with 1 nm encoder resolution	
PC REQUIREMENTS	Laptop included (32GB RAM, NVIDIA GeForce GTX 1080M)	
	Nanoimager software included with unlimited license	
	Free regular software updates	

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