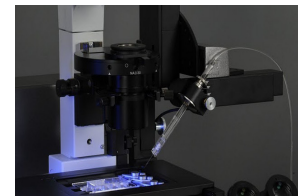
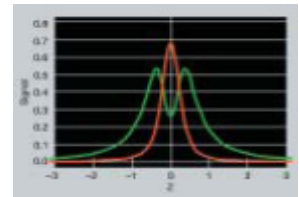
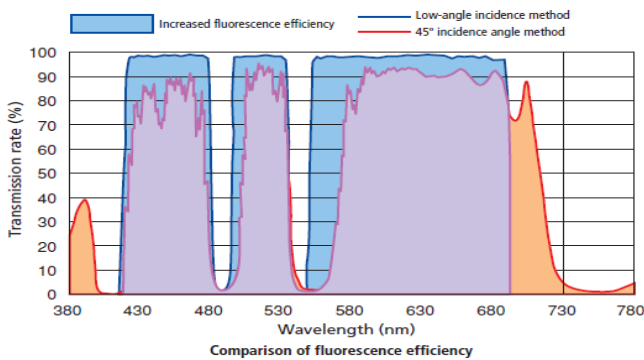
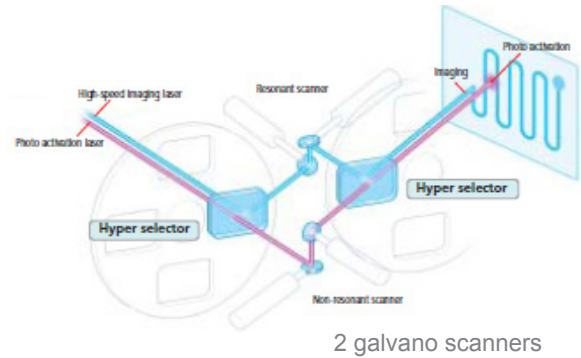




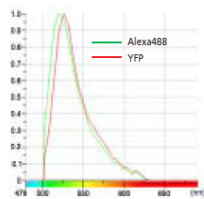
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SPECIFICATIONS

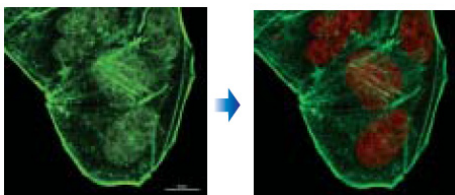
mmi CellEctor^{PLUS} with Nikon A1 confocal microscope



mmi CellRobot



accurate spectral unmixing



mmi CellEctor^{PLUS}



mmi CellPump



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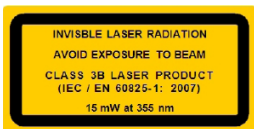


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SPECIFICATIONS

mmi CellEctor^{PLUS} with Nikon A1 confocal microscope

mmi CellEctor ^{PLUS}	Specification
mmi CellEctor ^{PLUS}	An integrated instrumentation solution for the fully automated recognition, aspiration and deposition of single cells in suspension onto cell culture and molecular biology devices A modular microscopy based sorting technology under full optical control and integrable with lasermicrodissection on the same platform Fully automated and software controlled manipulator
Automated Manipulator	Fully automated manipulator for a glass capillary with motorized 3D movement Customized tube adaptor Three high resolution step motors, software controlled Adjustable holder for glass capillary Set of 25 custom Tip Type III inner diameter 40µm
mmi CellPump	Fully motorized and software controlled high precision pump to acquire and deposit cells or particles in defined volumes consisting of: Cell tram vario pump with 2 nanoliter resolution Patented design for easy fill and flush
mmi CellRobot	3 Axis fully motorized and software controlled Easy swivel device to allow full access to the stage Patented capillary protection and easy adjustment
Microscope adaptation	Microscope mounting and adapters for integration with mmi CellCut based on Ti-E Nikon microscope
Microscopic system	Nikon Ti-E: Inverted and motorized Microscope body bright field 100W illumination arm Motorized revolver and z-focus ELWD condenser Plan Fluor Objectives: 4x 10x 20x 40x Fluorescence attachment with cassette shutter x-cite 3 fluorescence filter cubes with filters
Computer controlled xy-table	120x100 mm travelling path 0,025µm Step width for high precision cutting 1µm repositioning accuracy
mmi CellEctor ^{PLUS} Software	mmi CellEctor software integrated into the mmi CellTools platform mmi CellExplorer cell recognition software integrated into the mmi CellTools platform Integrated CellTools Software for video interface and system control
Software features	Fully automated or manual acquisition and deposition of cells Choice of three automation levels including full automation with scanning of the sample and cell recognition Complex movement modes of the capillary (skipping of the sample container wall, user-defined immersion and deceleration distance, deposition at vertical walls) User-defined spacing between the capillary tip and the slide with a dynamic tilt correction Automated capillary refocusing options: on the microscope slide or on the capillary tip (user-selectable) Five user-defined pump parameter sets for different capillary diameters (10, 15, 20, 30 and 40 µm)
Options	
Pen Screen system operation	Sensitive 22" HD touch screen monitor for user-friendly system operation to allow direct target identification with a special pen
mmi CellExplorer	A cell identification software based on colour recognition which automatically identifies and cuts out cells
Possible mmi CellEctor ^{PLUS} system upgrade	
mmi CellManipulator ^{PLUS} optical tweezers system	Ultra precise, contact-free manipulation of microscopic particles with up to 10 independent beams on a high-quality Nd: YAG infrared laser
mmi CellCut ^{PLUS} laser microdissection system	The ultimate laser microdissection tool to isolate single cells, groups of cells and life cells with the patented mmi CapLift technology



Swiss Precision

The manufacturer reserves the right to make technical changes without prior notice.



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SPECIFICATIONS

mmi CellEctor^{PLUS} with Nikon A1 confocal microscope

Input/output port

2 laser input ports, 4 signal output ports (for 4-PMT detector, spectral detector, VAAS, optional detector)

Laser

Wavelength and power

Laser diode (405 nm, 36 mW), Ar laser (457 nm/488 nm/514 nm, 40 mW), Solid-state laser (488 nm, 20 mW), Solid-state laser (561 nm, 10 mW), G-HeNe laser (543 nm, 1 mW), Laser diode (638 nm, 10 mW), Laser diode (440 nm, 20 mW)

Modulation

Method: AO (Acousto) device or drive current control
Control: power control for each wavelength, Return mask, ROI exposure control

Laser unit

Standard: LU4 4-laser unit, Optional: C-LU3EX 3-laser unit EX

Standard fluorescence detector

Wavelength: 400-750 nm

Detector: 4 PMT

Filter cube: 6 filter cubes commonly used for a microscope mountable on each of three filter wheels

Recommended wavelengths: 450/50, 482/35, 525/25, 595/50, 700/75, 540/30, 515/30, 585/65

Diascopic detector

Wavelength: 485-650 nm

Detector: PMT

Scanning head

Scanning

Standard image acquisition

Scanner: non-resonant scanner x2

Pixel size: max. 4096 x 4096 pixels

Scanning speed: standard 1 fps (512 x 512 pixels), max. 4 fps (512 x 512 pixels)

Zoom: 1-1000x continuously variable

Scanning mode: X-Y, XY rotation, Free line*, Line Z*

Dichroic mirror

Low-angle incidence method

Position: 8

Standard filter: 405/488, 405/488/561, 405/488/561/638, 405/488/543/638, 457/514, BS20/80

Pinhole

12-256 μm variable (1st image plane)

Spectral detector (with non-resonant scanner)

Number of channels: 32 channels

Corresponding wavelength: 400-750 nm

Spectral image acquisition speed: 4 fps (256 x 256 pixels), 1000 Ips*

Wavelength resolution: 2.5 nm, 6 nm, 10 nm, Wavelength range variable in 0.25 nm steps

Unmixing: High-speed unmixing, Precision unmixing

FOV

Square inscribed in a $\phi 18$ mm circle

Image bit depth

12 bits

Z step

0.025 μm (with FN1 stepping motor: 0.05 μm)

Microscope

ECLIPSE Ti-E inverted microscope,

Option

Motorized XY stage, High-speed Z stage, VAAS

Software

Display/image generation

2D analysis, 3D volume rendering/orthogonal, 4D analysis, spectral unmixing

Image format

JP2, JPG, TIFF, BMP, GIF, PNG, ND2, JFF, JTF, AVI, ICS/IDS

Application

FRAP, FLIP, FRET, photo activation, three-dimensional time-lapse imaging, multipoint time-lapse imaging, colocalization

Control computer

OS Microsoft Windows® Vista Business 64-bit SP1

(Japanese version /English version)

CPU Intel Xeon E5450 (3 GHz/1333 MHz/quad core) or higher

Memory 8 GB

Hard disk SAS (15,000 rpm), 160 GB or more x2, RAID 0 configuration

Data transfer Dedicated data transfer I/F

Monitor 1600 x 1200 or higher resolution, dual monitor configuration recommended



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