

Zeiss LSM710

The Zeiss LSM710 is an inverted laser scanning confocal microscope system capable of generating crosstalk-free multi-fluorescence images with simultaneous excitation of samples stained up to four colours. The TwinGate main beam splitter permits a myriad combinations of excitation wavelengths and excitation laser light suppression for improved single-to-noise ratio imaging. Furthermore the multiple position feature simplifies the multidimensional imaging process as the system remembers the positions added into the database and moves the motorized scanning stage to each automatically. This microscope is also equipped with an environmental control chamber large enough to contain the objective lenses such that mechanical drift due to temperature difference between the glass slide and the objective lens surface is minimized during time-lapse imaging.

Features:

Incubation	Live cell imaging chamber with CO ₂ and temperature control
Imaging Modes	Epifluorescence and DIC illumination
Stage	Motorized XY-scanning stage suitable for experiments with fixed multiple positions
Scanning Module	<ul style="list-style-type: none"> - 8-bit, 12-bit or 16-bit selectable - 256 x 256 – 1024 x 1024 pixels - Up to 12.5 frames/sec with 256 x 256 pixels; 5 frames/sec with 512 x 512 pixels; up to 2619 lines/sec
Detector	<ul style="list-style-type: none"> -Three simultaneous channels with highly sensitive low dark noise photomultiplier tubes (PMTs). -One TLD Bright field Detector
Tile Scan / Mosaic Scan	High resolution imaging of a larger field of view

Objective lenses:

Magnification	Immersion	Type	Numerical Aperture	Working Distance (mm)
5X	Air	EC Plan-NEOFLUAR	0.16	18.5
10X	Air	EC Plan-NEOFLUAR	1.4	5.2
20X	Air	Plan-NEOFLUAR	0.5	2.0
40X	Oil	Plan-NEOFLUAR	1.3	0.21
63X	Oil	Plan Aplanachromat SF25	1.4	0.19
100X	Oil	Plan Aplanachromat SF25	1.4	0.17

Laser Module:

- Pigtail-coupled lasers with polarization preserving single-mode fibers
- Stabilized VIS-AOTF for simultaneous intensity control
- Switching time of less than 5 μ s

Description	Excitation (nm)	Laser	Power (mW)
DAPI	405	Diode	30
FITC	458, 488, 514	Argon	25 / 30
TRIC	543	DPSS (diode-pumped solid-state)	20
Cy5 (far-red)	633	HeNe	5

Software:

Zen Black 2011