

Confocal 8 –SP5-II tandem scanner confocal (August 2020)

Technical Specifications

- Leica SP5-II AOBS confocal laser scanning microscope attached to a Leica DMI 6000 inverted epifluorescence microscope with ‘Adaptive Focus Control’ to correct focus drift during time-courses.
- Conventional scanner and resonant scanner enable a broad range of applications including imaging at up to 25 frames per second with resonant scanner.
- Three standard PMTs plus two ‘hybrid’ GaAsP detectors, which offer much greater sensitivity, boosting of low signal and photon counting modes.
- Transmitted light detector for brightfield, phase contrast, DIC.
- Spectrophotometers allow customised detection of emitted light, spectral scanning etc.
- Equipped with 50 mW 405 nm diode laser, 65 mW Ar laser (458, 476, 488, 496, 514 nm lines), 20 mW solid state yellow laser (561 nm), 2mW Orange HeNe (594 nm), 10 mW Red He/Ne (633 nm).
- AOTFs for all laser lines allow rapid attenuation, ROI scanning and localised photo-bleaching. Beam expander enhances bleaching for FRAP etc.
- AOBS (Acousto-Optical Beam Splitter) automatically adjusts to selectively reflect each excitation line and allows optimisation of detection close to (and overlapping) excitation lines.
- Notch filters block reflection signal, enabling clearer imaging close to coverslips.
- Suitable for a wide range of blue, green, red and far-red fluorophores.
- Environmental chamber (Life Imaging Services) for temperature and CO₂ enrichment – routinely maintained at RT/25°C unless another temp requested on booking.
- Z-Galvo for faster and more accurate focusing and enables “galvo flow” acquisition.
- Märzhäuser scanning stage – enables multi-position acquisition and tiled imaging.

Filters for visual inspection

Cube	Excitation range	Fluorophore (examples)	Excitation filter	Dichroic mirror	Emission filter
I3	Blue	FITC GFP	BP 450-490	RKP 510	LP 515
N2.1	Green	Rhodamine TRITC	BP 515-560	RKP 580	LP 590
C/Y	Blue	CFP and YFP	BP 436/412; 500/20	Double 445, 515	BP 467/37; 545/45
A4	UV	DAPI	BP 360/40	400	BP 470/40

Lenses

Lens	Dry/Oil	Phase contrast	DIC	Working distance (mm)	Numerical aperture	Features	Serial number	Image size at 0.75x zoom in microns
10x PL APO CS	Dry	No	Yes	2.2	0.4		506285	1500
20x HC PL APO CORR	Oil or glycerol	No	Yes	0.17 – 0.26	0.7	Coverglass thickness correction	506326	750
40x PL APO CS	Oil	No	Yes	0.22	1.3		506331	375
63x PL APO CS	Oil	No	Yes	0.1	1.4	Iris diaphragm	506192	237.5
63x HCX PL APO	Glycerol	No	Yes	0.28	1.3	Coverglass thickness correction	506194	237.5