Confocal 12 – SP8 with Lightning

Technical Specifications

- Leica SP8 AOBS confocal laser scanning microscope attached to a Leica DM I8 inverted epifluorescence microscope.
- Conventional scanner and resonant scanner enable a broad range of applications including imaging at up to 25 frames per second with resonant scanner.
- One standard PMTs plus two 'hybrid' detectors, which offer much greater sensitivity, boosting of low signal and photon counting modes.
- 'Lightning' adaptive image restoration enables optimisation of resolution (to 120nm with reduced pinhole and optimised image stacks) and enhanced SNR of single images (including with resonant scanner).
- Transmitted light detector for brightfield imaging.
- Spectrophotometers allow customised detection of emitted light, spectral scanning etc.
- Equipped with 65 mW Ar laser (458, 476, 488, 496, 514 nm lines), 20 mW DPSS yellow laser (561 nm), 10 mW Red He/Ne (633 nm) and 50 mW 405 nm diode laser.
- AOTFs for all laser lines allow rapid attenuation, ROI scanning and localised photo-bleaching.
- AOBS (Acousto-Optical Beam Splitter) automatically adjusts to selectively reflect each excitation line and allows optimisation of detection close to (and overlapping) excitation lines.
- Suitable for a wide range of blue, green, red and far-red fluorophores.
- Scanning stage – enables multi-position acquisition and tiled imaging.
- LASX software with additional applications modules - Live Linear Unmixing and 3D Visualisation

Filters for visual inspection

	Excitation range	**Fluorophore (examples)**	**Excitation filter**	**Dichroic mirror**	**Emission filter**
FITC	Blue	FITC GFP	BP 450-490	RKP 510	LP 515
RHOD	Green	Rhodamine TRITC	BP 515-560	RKP 580	LP 590
DAPI	UV	DAPI	BP 360/40	400	LP 425

Lenses

Lens	**Dry/ Oil**	**Phase contrast**	**DIC**	**Working distance (mm)**	**Numerical aperture**	**Serial number**	**Image size at 0.75x zoom in microns**
*10x PL Fluotar	Dry	No	No		0.4	506507	1550
20x HC PL APO CS2	Dry	No	No	0.62	0.75	506517	775
40x HC PL APO CS2	Oil	No	No	0.24	1.3	506358	387.5
63x HC PL APO CS2	Oil	No	No	0.14	1.4	506350	246
*63x PL Apo CS	glyc	No	No	0.3	1.3	506193	246

* not CS2 so will be chromatic aberration related alignment issues at blue end of spectrum