Dragonfly Spinning Disk Confocal

Curtin MRI's high-speed and high-sensitivity microscope for various sample types, from large 3D specimens to single cells. The Dragonfly offers high resolution, fast 3D imaging and seamless large-area stitching.

Remember to **acknowledge** the facility in your publications! For example:

Confocal microscopy analysis was performed using the Curtin Medical Research Institute Microscopy and Histology Shared Resources Laboratory with the assistance of Mr Michael Nesbit. The Andor Dragonfly was funded by the Australian Research Council under grant LE200100122

Features

- Large Area Stitching
- Borealis Field Uniformity and Imaris Stitcher module
- 3D imaging
- Choice of pinholes, fast Piezo Z stage and fast camera triggering
- 2 high-sensitivity cameras: Sona 4.2B sCMOS (2046x2046px) and iXon 888 EMCCD (1024x1024px)
- Highest quality Nano Crystal Coat Nikon objectives
- Motorised camera magnification (1x, 1.5x, 2x) and GPU accelerated Deconvolution
- SRFF stream super-resolution
- Live Cell Incubation
- MicroPoint photo-ablation
- Brightfield and Differential Interference Contrast (DIC)
- Widefield Laser Fluorescence

Objective Lenses

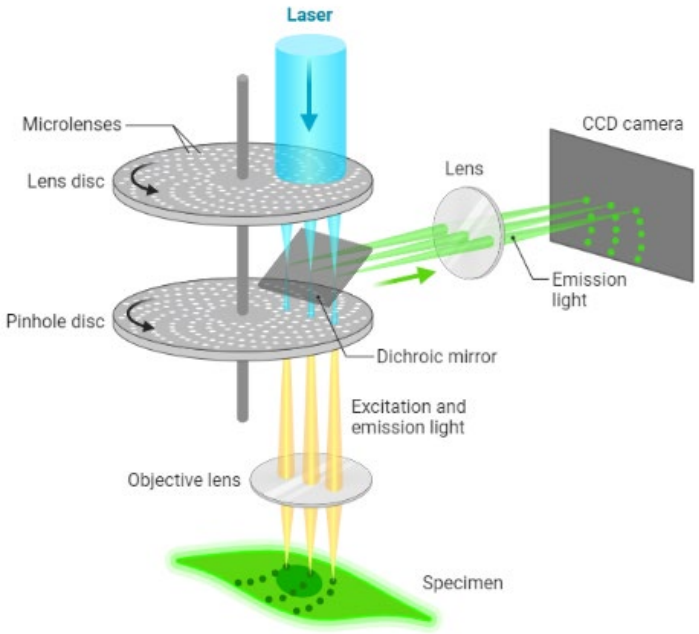
	Numerical Aperture (NA)	Immersion media	Correction	Working Distance (mm)	Cover glass thickness (mm)
4x	0.20	Dry	CFI Plan Apo Lambda	20	
10x	0.45	Dry	CFI Plan Apo Lambda	4	0.17
20x	0.75	Dry	CFI Plan Apo VC	1	0.17
25x	1.05	Silicone Oil	CFI Plan Apo Lambda	0.55	Correction collar 0.11-0.23 Set at 0.17
40x	1.30	Oil	Plan Fluor	0.24	0.17
60x	1.40	Oil	Plan Apo Lambda	0.13	0.17

Excitation and Emission

Laser Excitation (nm)	Dichroic	Emission Filters (nm)
405	1	445/46
445	2	478/37
488	1	521/38
514	2	538/20
561	1 or 2	594/43
637	1 or 2	685/47
730	1	809/90

Technology Overview

Spinning Disk Confocal technology illuminates multiple points of your sample for fast, gentle imaging. Emitted light passes through a disk with thousands of pinholes, which block out of focus light.



Methods Example

Image acquisition was performed using an Andor Dragonfly 502 spinning disk confocal microscope (Oxford Instruments, UK). Imaging was conducted with a 60×/1.40 NA oil immersion Plan Apo Lambda objective, with an additional 2× camera magnification. Images were captured using an Andor Sona 4.2B sCMOS camera.Alexa Fluor 488 was excited at 488 nm and emission collected at 521/38 nm, while Alexa Fluor 647 was excited at 637 nm and emission collected at 685/47 nm. Z-stacks were acquired over a 20 µm range with a step size of 0.3 µm. Image deconvolution was performed using Imaris GPU-accelerated deconvolution, with the point spread function (PSF) automatically estimated from image metadata. Image processing and export were conducted using Imaris version 11.0.1 (Oxford Instruments, UK).

May2026