**Nikon A1 Confocal**

* **Applications:**
  + 2D and 3D imaging of cells and tissues stained with multiple fluorophores.
  + GaAsP detectors have high quantum efficiency i.e. can pick up weak fluorescent signals. Hence, good for detection of weak fluorescent probes.
  + Multichannel/multipoint/ Z-stacks/large/tile/timelapse imaging.
  + JOBS module can be used for advanced automated and customized imaging workflows
  + Easy sample overview/navigation by automated exploration of entire sample.
  + High speed imaging using resonant scanner. For example, calcium signaling……..,
  + Spectral imaging and unmixing applications
  + Live cell imaging
  + FRET, FRAP, FLIP imaging.
  + Colocalization experiments
  + Real time deconvolution
* **Specifications:**
* Microscope body:
  + Nikon Ti2 microscope
* Sample holder (compatible with)
  + Glass slides
  + Chambered glass slides (Ibidi…)
  + Circular glass/polymer/plastic bottom culture dishes (diameter: 20mm, 25mm, 30mm, 35mm,40mm). Be careful to check the working distance of the objective when using plastic bottom dishes
  + 4, 12, 24, 48,96 well plates with plastic/glass bottom. Be careful to check the working distance of the objective when using plastic bottom plates
* Objectives:
  + 4X (Plan, Apo, ʎ, NA 0.2 , WD 20mm)
  + 10X (Plan, Apo, ʎ, NA 0.45, WD 4mm)
  + 20X (Plan, Apo, ʎ, Air, NA 0.75, WD 1mm)
  + 60X (Plan, Apo, VC, Water, NA 1.2, WD 0.31mm)
  + 100X (Plan, Apo, ʎ, Oil, NA 1.45, WD 0.13mm)
* Light Source:
  + 407nm laser
  + 440 nm laser
  + 488 nm laser
  + 514 nm laser
  + 561 nm laser
  + 637 nm laser
  + Cool LED pE-300 Unit (for epifluorescence)
  + LED lamp (for diascopic transmission illumination)
* Scanner:
  + Galvano scanner (High quality image acquisition upto 10fps at resolution 4096 X4096 pixels)
  + Resonant scanner (Fast image acquisition **upto 30FPS** at resolution 512 X 512 pixels)
* Detectors:
  + A1-DUG hybrid 4-channel multi detector (Two GaAsP detectors and two normal PMTs)
  + A1-DUS spectral detector with 32-channel array detectors (range 400-720nm) with 2.5-10nm resolution
  + A1-DUVB GaAsP PMT detector with tunable detection bandwidth
  + Diascopic detector unit.
* Stage:
  + Fully motorized
  + Can be programmed and setup for multipoint automated imaging experiments
  + Nikon Perfect Focus System (PFS) for hardware based autofocus
  + Water dispenser for 60X Objective
  + Option to add incubation chamber for temperature control and CO2 supply for live cell imaging
* Software:
  + NIS Elements (version………..) with ND acquisition and JOBS workflow module