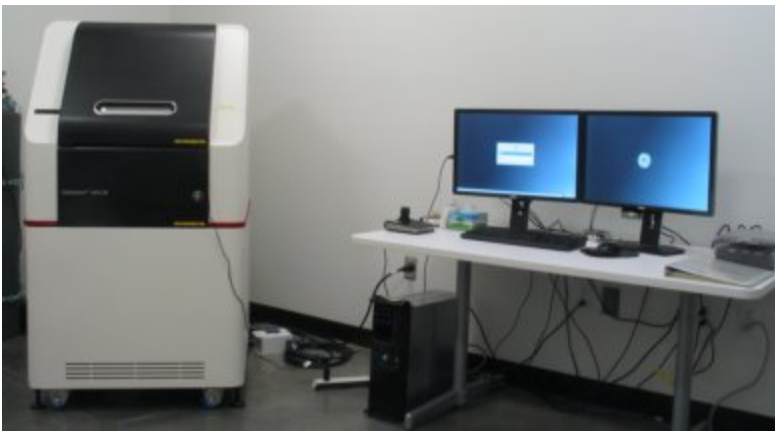


OMX: GE DeltaVision OMX SR super-resolution microscope, LSB B204

Overview

- high speed 2D- and 3D-SIM, TIRF, SIM-TIRF, and widefield ([compare between modes](#))
- dual 4-laser modules for 2 separate light paths: SI and Ring TIRF
- LED transillumination
- hardware UltimateFocus and software autofocus to compensate for axial drift
- 3 sCMOS cameras: images are usually acquired at 512×512 pixels, 80 nm per pixel
- environmental control for temperature, humidity, and gas
- software: AcquireSR and softWoRx
- please acknowledge grant proposal S10 OD021490 on any publications that have used this microscope



Specification

- modules
 - Blaze structured illumination (SI) for 3D SI, 2D SI, and SI TIRF
 - Ring TIRF/Photokinetic (PK) for TIRF, bleaching (FRAP, FLIP), FRET, and photo activation
 - UltimateFocus to detect the coverglass surface in real time and maintaining the sample Z position to within 25 nm of the position set
- 4 solid state diode lasers: 405, 488, 568, 640 nm
- optical filters

polychroic filters: BGR Drawer

channel	laser line (nm)	phase band (nm)	Reflection Band (nm)	Transmission Band (nm)
DAPI	405	403–407	382–409	421–450
AF488	488	487–488	462–492	505–549
AF568	568	561–569	561–580	591.5–626.5
Cy5	640	639–644	639–652	664–702

emission filters

channel	Center Wavelength/Bandwidth (nm)	blocking range (nm)
DAPI	435.5/31	300–410, 461–710
AF488	528/48	300–494, 562–710
AF568	609/37	300–580.5, 637–710
Cy5	683/40	300–653

- camera: pco.edge 4.2 sCMOS
 - 6.5 μm ×6.5 μm cell
 - readout noise: 1.5 electrons at 272.3 MHz
 - 16-bit ADC, monochrome
 - exposure time: 100 μs to 10 S
- optics
 - PLAPON 60XOPSF: 60× oil, NA 1.42, WD 0.15 mm, tested for PSF
 - APON 60xOTIRF: 60× oil, NA 1.49, WD 0.1 mm, correction collar for coverglass thickness and temperature
- environmental control
 - Cell Box: stage enclosure for temperature, humidity, O₂ and CO₂ control
 - objective heater
- Capabilities of various imaging modes

	widefield	widefield deconvolution	2D SIM	3D SIM
lateral resolution ¹	320 nm	250 nm	120 nm	120 nm
axial resolution ¹	600 nm	500 nm	600 nm	340 nm
imaging time ²	~3 mS	~3 mS, needs post processing: deconvolution	<45 mS per slice (9 images per slice)	<100 mS per slice (15 images per slice)
application	fast, live or fixed tissue imaging	fast, live or fixed tissue imaging	super resolution, live or fixed tissue imaging	super resolution, live or fixed tissue imaging
¹ for 488 nm excitation ² 512×512 pixels, 1 mS exposure, per Z slice, zero time delay				