

LMS Light Microscopy Laboratory

CONFOCAL MICROSCOPES

Leica Stellaris 5

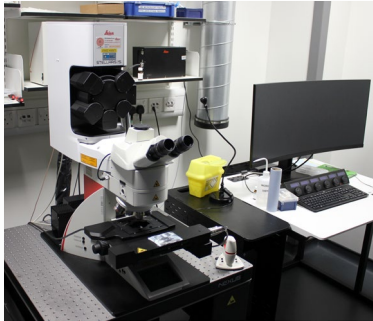
Fully motorised upright microscope with four sensitive HyD-S detectors and conventional as well as fast resonant scanner. Additional 40x/1.25NA glycerol objective. Lightning and Navigator software.

Illumination

405nm/442nm/485-685nm White light laser

Applications

- 3D fluorescence imaging (slides & 35mm dishes)
- Lightning super-resolution imaging



Leica SP8X STED

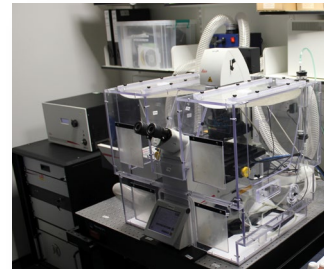
Fully motorized inverted microscope with three PMT and two sensitive HyD detectors and conventional as well as fast resonant scanner. Hardware autofocus. Navigator software.

Illumination

405nm/442nm/Argon/470-670nm White light laser;
592nm/775nm STED depletion lasers

Applications

- 3D fluorescence imaging (multiwell plates, slides & 35mm dishes)
- Live cell imaging
- 3D gated STED super-resolution imaging



Leica SP8 DLS (Digital Light Sheet)

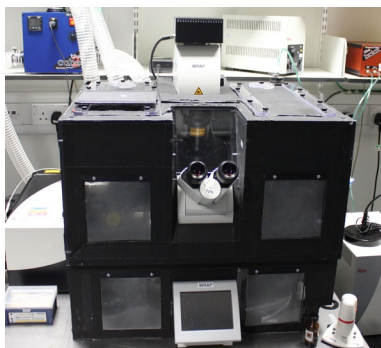
Fully motorised inverted microscope with three PMT detectors and one sensitive HyD detector. Hardware autofocus. Hamamatsu FLASH camera for light sheet imaging and additional camera for fast well scanning. Navigator software.

Illumination

405nm/488nm/552/638nm lasers

Applications

- 3D fluorescence imaging (multiwell plates, slides & 35mm dishes)
- Light sheet imaging of transparent aqueous samples
- Live cell imaging



Leica SP5

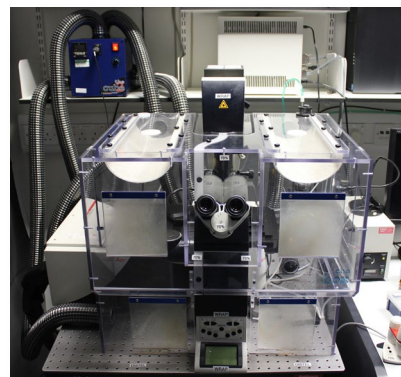
Fully motorized inverted microscope with three PMT and two sensitive HyD detectors and conventional as well as fast resonant scanner. LAS AF software with MatrixScreener. Additional PC with LASX Navigator and colour camera.

Illumination

405nm/Argon/561nm/594nm/633nm lasers

Applications

- 3D fluorescence imaging (multiwell plates, slides & 35mm dishes)
- Live cell imaging
- Multi-well plate scanning with colour camera



CONFOCAL MICROSCOPES

Olympus Spinning Disk

Fully motorized inverted microscope with sensitive ORCA Fusion camera. Fast Piezo focus and hardware autofocus. Yokogawa CSU-W disk. CellSense and ScanR software.

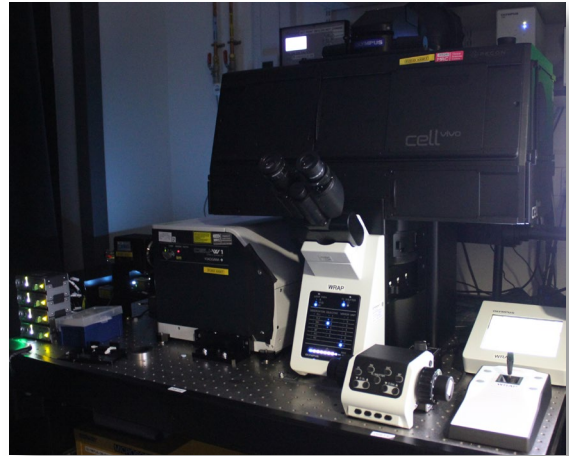
Illumination

405/488/561/640nm lasers

Spectra X 7-colour light engine for widefield imaging

Applications

- 3D fluorescence imaging (multiwell plates, slides & 35mm dishes) in confocal or widefield mode
- Live cell imaging
- High content screening and analysis



LIGHT SHEET IMAGING

Phaseview Alpha3

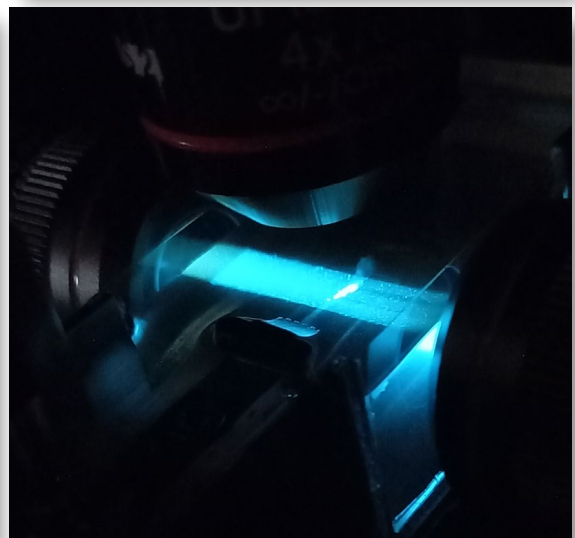
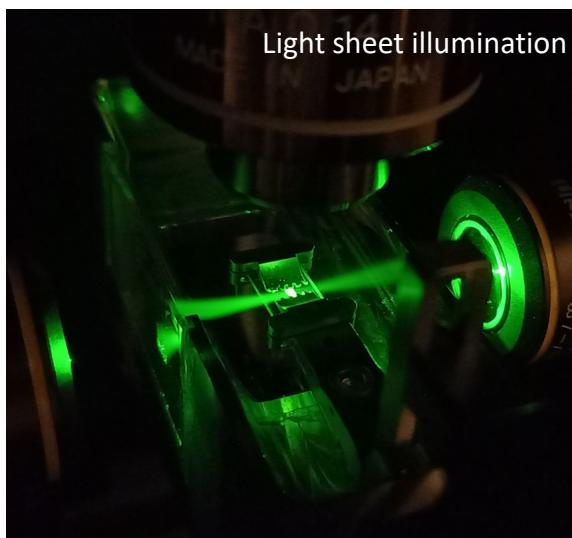
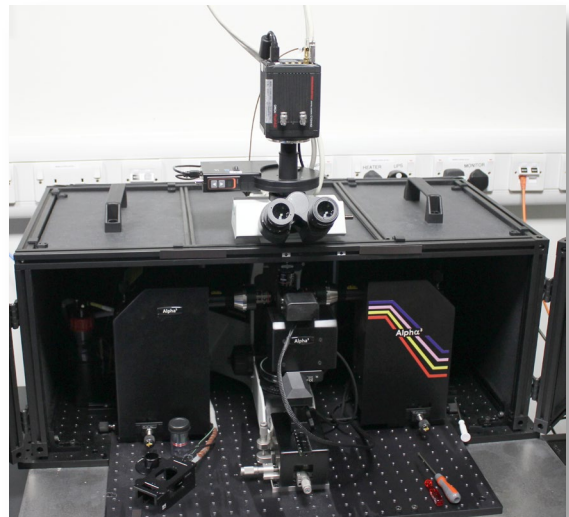
Dual side light-sheet illumination for imaging large, optically cleared samples in aqueous or other non-toxic mounting media like ethyl-cinnamate.

Illumination

405/488/561/640/730nm lasers

Applications

- 3D multi-colour fluorescence imaging of large mm to cm sized samples
- Live cell imaging



SUPER-RESOLUTION IMAGING

Zeiss Elyra S1 SIM

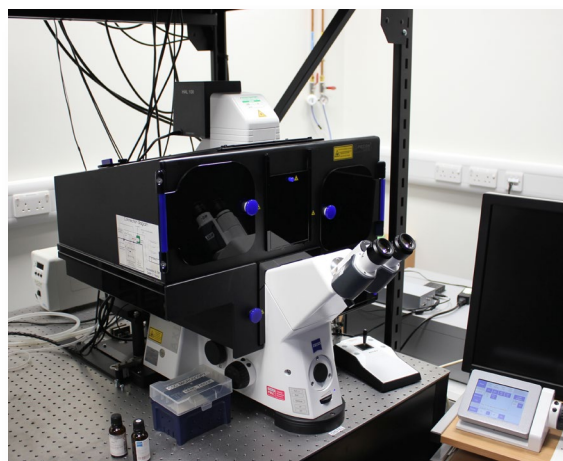
Fully motorised inverted system with structured illumination super-resolution imaging capabilities, doubling the achievable resolution by a factor of 2 in XY and Z dimensions. Hardware autofocus. ZEN software

Illumination

405/488/561/640nm lasers

Applications

- 3D super-resolution imaging
- Live cell imaging



Zeiss TIRF/STORM system

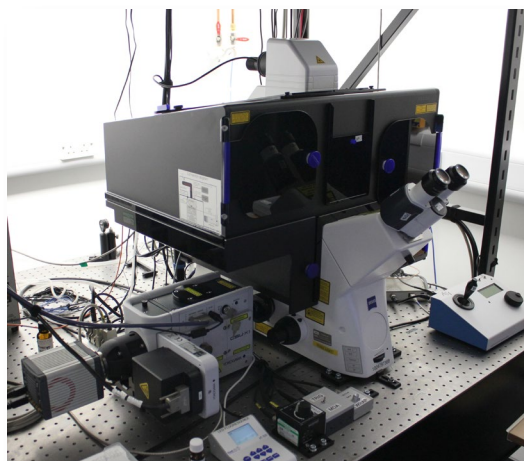
Fully motorised inverted system with adjustable Cairn Opto-TIRF illumination for single molecule imaging techniques. Hardware autofocus for sample stabilisation. CSU-X1 spinning disk with single laser line for live cell imaging.

Illumination

405/462/525/638nm lasers for single molecule imaging
488nm laser for spinning disk

Applications

- 2D-3D super-resolution imaging (STORM/DNA-PAINT)
- Live cell imaging
- 3D confocal GFP live cell imaging



SLIDE SCANNING

Zeiss AxioScan Z1

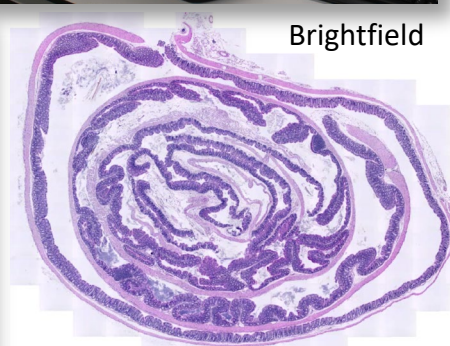
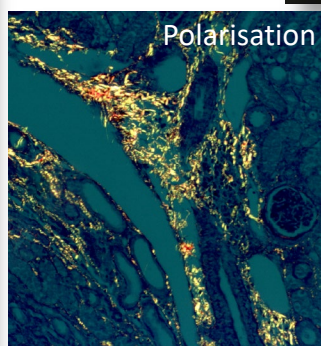
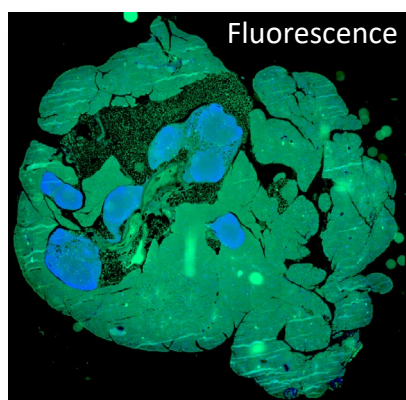
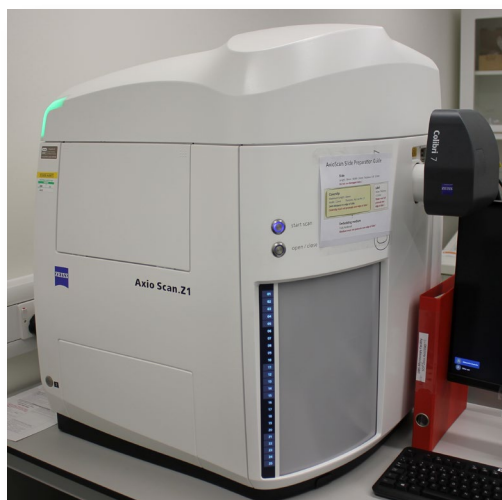
Fully motorised slide scanner for imaging up to 100 slides in brightfield, polarization or multi-colour fluorescence modes. ZEN software.

Illumination

Colibri 7-colour LED light engine

Applications

- Imaging large number of histological sections



WIDEFIELD IMAGING SYSTEMS

Leica DM6000

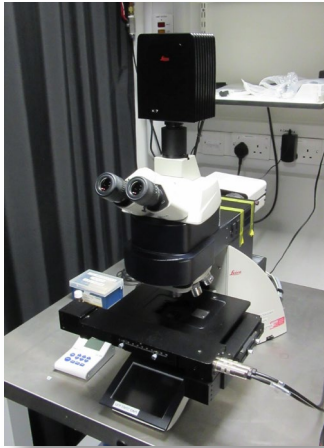
Fully motorised upright microscope with sensitive colour camera for brightfield and multi-colour fluorescence imaging. Navigator software.

Illumination

EL6000 Metal-halide fluorescence lamp
(DAPI/FITC/TRITC/TxRed)

Applications

- Imaging large tissue sections or whole slides in brightfield and/or fluorescence
- Scanning of slides unsuitable for the slide scanner



Leica FISH

Manual upright microscope with phase contrast, DIC and 5-colour fluorescence imaging

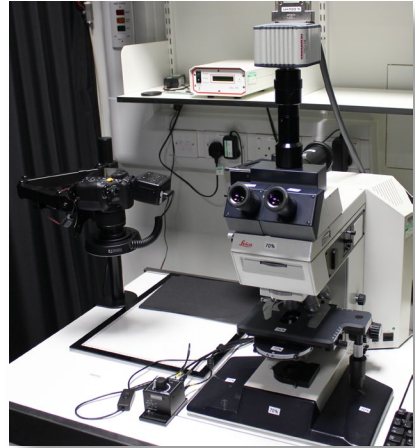
Separate Canon DSLR camera with LED illumination panel for macro photography. Micro-Manager and EOS utility software.

Illumination

100W HBO with excitation filterwheel
(DAPI/FITC/TRITC/CY5/CY7)

Applications

- Multi-colour fluorescence imaging in combination with DIC or phase contrast



Leica Microinjection

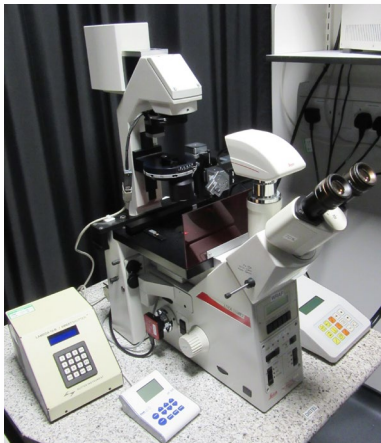
Manual inverted microscope with phase contrast, fluorescence imaging and separate colour camera. Optional Eppendorf microinjection equipment. Micro-Manager and LAS-X software.

Illumination

Cooled light engine (DAPI/CFP/GFP/YFP/RFP-mCherry)

Applications

- Imaging samples in plates and dishes (checking expression of fluorescent reporter or looking at lacZ expression)



Zeiss Upright

Manual upright microscope with phase, DIC and optional circular-polarisation contrast. Canon DSLR camera with EOS utility software.

Illumination

Brightfield only !

Applications

- DIC/phase contrast imaging of slide mounted samples
- Imaging histological samples with colour camera, also examining fibrosis with polarisation contrast



WIDEFIELD IMAGING SYSTEMS

Olympus Stereo SZX16

Stereo microscope with sensitive colour camera (optional fluorescence camera) for brightfield and fluorescence imaging. ThorCam software. Motorised stage for automated image acquisition using Micro-Manager software.

Illumination

Cooled light engine (DAPI/GFP/RFP/mCherry)
Schott KL1500 cold light source
LED base for transmitted and darkfield illumination

Applications

- Imaging large thick samples in plates or dishes
- Automated scanning of colony assays in multi-well plates



Deltavision

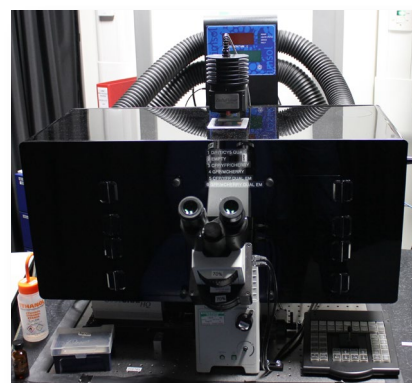
Inverted Olympus IX71 microscope with motorised stage and focus. Sensitive camera and Spectra X light engine for multi-colour fluorescence imaging. SoftWorx acquisition and deconvolution software.

Illumination

7-colour SpectraX light engine
(DAPI/CFP/GFP/YFP/DsRed/mCherry/Cy5)

Applications

- 3D multi-colour fluorescence imaging of fixed samples
- Deconvolution to improve contrast of acquired image stacks



Zeiss Ultraview

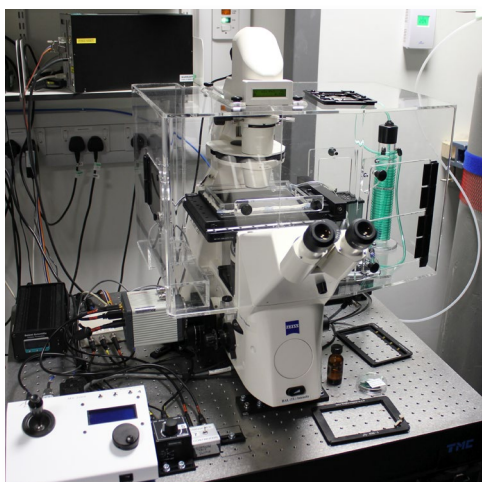
Inverted Zeiss microscope with motorised stage and 300 μm piezo focus. Orca FLASH 4 camera and Spectra III light engine for five colour fluorescence imaging. Micro-Manager software.

Illumination

Spectra III light engine for imaging
(DAPI/Alexa488/Alexa555/Cy5/Alexa750)

Applications

- Fast 3D fluorescence imaging (multiwell plates, slides & 35mm dishes)
- Live cell imaging with phase contrast and fluorescence



Olympus IX70

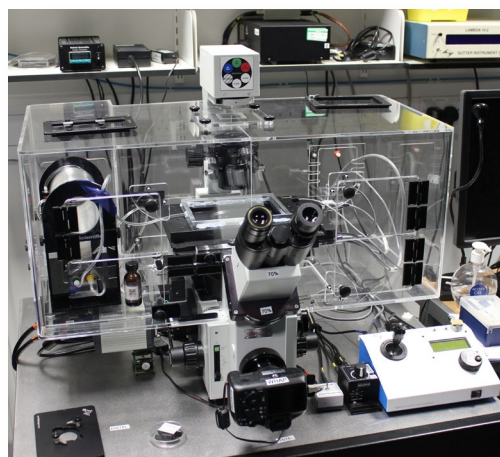
Inverted Olympus IX70 microscope with motorised stage and 300 μm piezo focus. Orca FLASH 4 camera and Spectra X light engine for multi-colour fluorescence imaging. Live cell imaging. Micro-Manager software.

Illumination

7-colour Spectra light engine
(DAPI/CFP/GFP/YFP/DsRed/mCherry/Cy5)

Applications

- Fast 3D fluorescence imaging (multiwell plates, slides & 35mm dishes)
- Live cell imaging with phase contrast and fluorescence
- CFP/YFP FRET imaging



WIDEFIELD IMAGING SYSTEMS

Leica DMI6000

Fully automated inverted Leica DMI6000 microscope with sensitive Orca FLASH 4 camera for multi-colour fluorescence imaging.

Illumination

Transmitted light LED
EL6000 Metal-halide fluorescence lamp
(DAPI/Alexa488/Alexa555/Alexa594/Cy5)

Applications

- High throughput fluorescence screening applications
- Imaging of multiwell plates, up to four slides and up to 6 35mm dishes
- Fluorescence imaging of large sections or whole slides



LASER MICRODISSECTION

Zeiss PALM

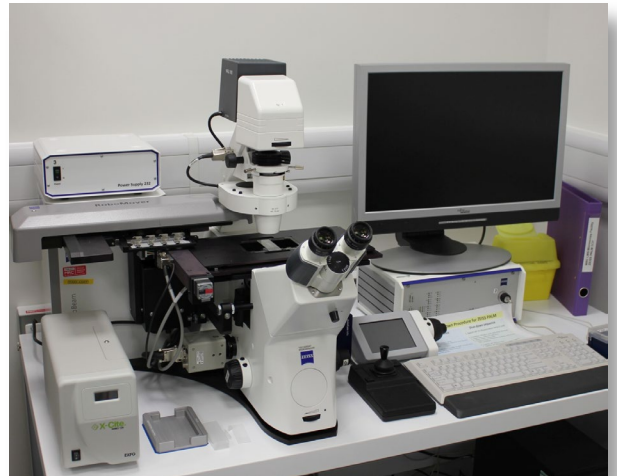
Fully automated inverted Zeiss PALM Microbeam with Robomover for fully automated laser-microdissection and catapulting and sample capture into collection devices. Sensitive colour camera for processing histology samples and fluorescent samples

Illumination

Transmitted light
Xcite 120W Metal-halide fluorescence lamp
(DAPI/Alexa488/Alexa555)

Applications

- Contact free sample cutting and collection



microCT Scanner

Bruker Skyscan 1272

X-ray based microCT scanner for 3D imaging of large samples. Sample size up to Ø 75 mm and height of 80 mm

Illumination

X-ray 40-100kV

Applications

- 3D imaging technique to reveal the internal structures of entire fixed samples (flies, organs, embryos for example) with little sample preparation
- To enhance contrast of soft tissues typically stained with I2/KI

