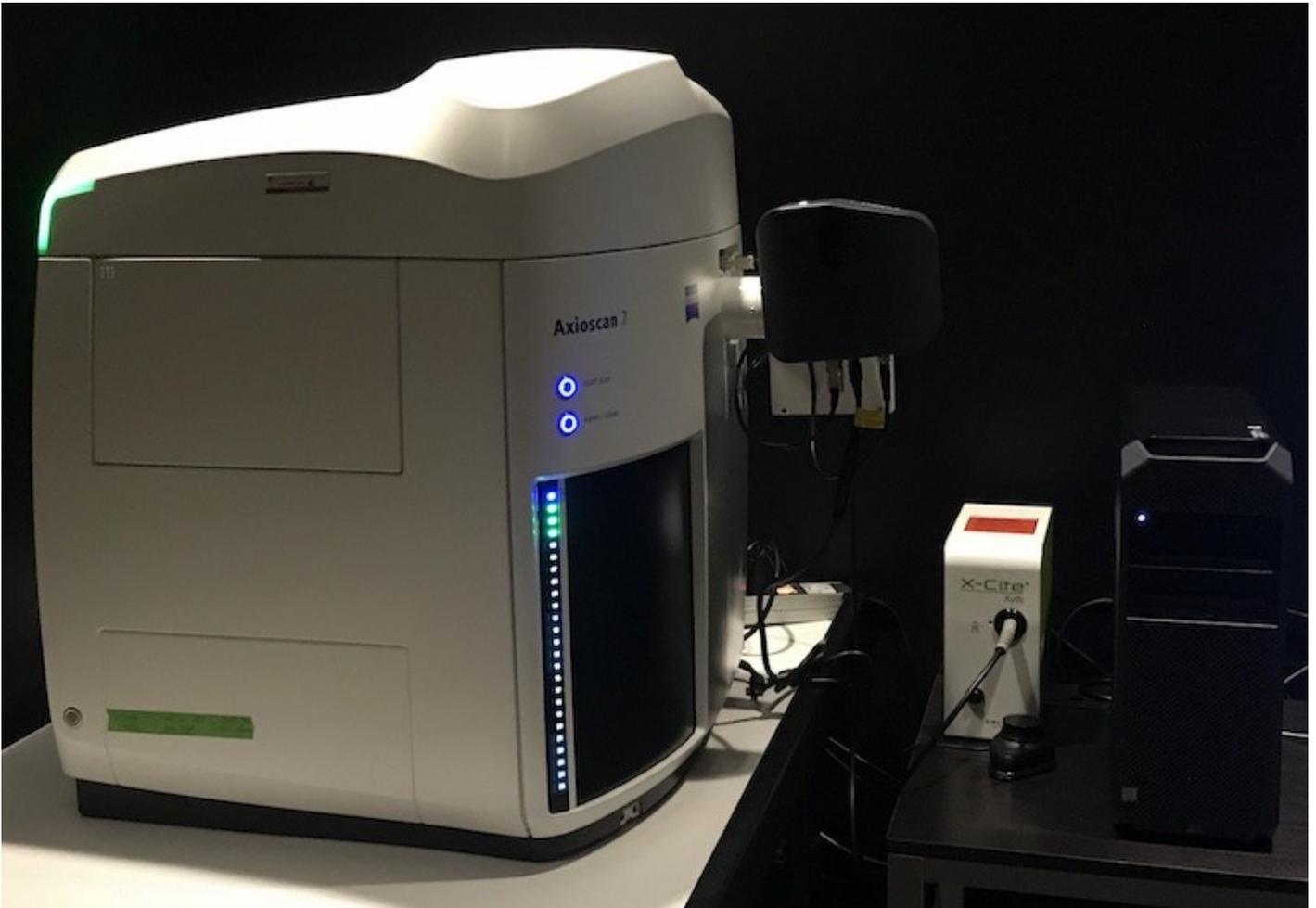


Zeiss Axioscan 7

Location: HCI Room 1470



The Zeiss AxioScan 7 is a fast and flexible slide scanner that digitizes specimens to produce high-quality virtual slides. In addition to brightfield slide scanning, the Axioscan 7 can scan up to five fluorescent channels using fast switching LED lights. Up to 100 slides can be loaded onto the scanner, making it suitable for large projects, including digital archives. Scanned images are saved as CZI files and can be viewed using Zeiss freeware Zen-lite or third-party image analysis programs.

Main Features of the Axioscan 7:

- Holds up to 100 slides.
- Able to image both bright-field (e.g. H&E slides) and up to nine-colour fluorescent samples.

- Image areas can be detected automatically or marked out, to form montages of the whole sample, or multiple samples on each slide
- Setup wizard to guide users through optimising image acquisition and autofocus parameters.
- Once setup, the system can be left for unattended automated scanning e.g. overnight

Suggested Applications:

- Fixed slides.

Configurations:

The Axioscan 7 has a replaceable filter turret and can be switched between two light sources. The 10 position filter cube turret is typically used with the Colibri 7 switchable LED source. The fast filter wheel is typically used with the X-Cite Xylis LED source.

Configuration	Light Source	Filter Set
1	Colibri 7	Filter Cubes
2	X-Cite Xylis	Fast Filter Wheel

Only Cell Imaging staff are permitted to switch between configurations. Please schedule our time and plan accordingly.

Light Sources:

Colibri 7:

The Colibri 7 has 6 LEDs with excitation filters to provide 7 excitation bands. (One LED has a motorized filter to split it into two bands.)

Excitation Bands **(There is one too many here)**

Band	Wavelength / Bandwidth (nm)	Some typical fluorophores
UV	385/30	API, Hoechst 33342, Hoechst 33258, Alexa Fluor 350, Alexa Fluor 405, Indo-1, eBFP / BFP, eGFP (wt), True Blue
V	423/44	Pacific Blue, Lucifer Yellow, Alexa Fluor 433, eCFP, Cerulean

B	469/38	FM1-43, Cy2, eGFP, NBD, MitoTracker Green, Alexa Fluor 488, BCECF, Calcein, DiO SNAFL, YO-Pro-1, Nissl, LysoSensor Green, mHoneydew, FITC / Fluorescein, Kaede (green / red), PerCP, YoYo-1, FuraRed
C	511/44	Rhodamine 123, Fluo-4, Oregon Green BAPTA, Sytox Green, eYFP, FM4-64, Eosin/HE, Acridine Orange, JC1, Bodipy FL, Propidium Iodide, Spectrum Green, Calcium Green
G	555/30	TRITC, 7-AAD, Cy3, tdTomato, Alexa Fluor 546, Alexa Fluor 555, DsRed, mOrange, TagRFP, SNARF, DyLight 549, Spectrum Orange
Y	590/27	MitoTracker RED FM/CMXRos, txRed, mCherry, mRFP1, Cy3.5, Rhodamine B, Alexa Fluor 568, Dylight 594, Alexa Fluor 594, Bodipy TR
R	631/33	Alexa Fluor 633, Alexa Fluor 647, Cy5, DRAQ5, ToTo-3, ATTO-655, MitoTracker DeepRed, APC, ATTO-647N
FR	735/40	Alexa Fluor 750, Alexa Fluor 790, Cy7, Cy7.5

X-Cite Xylis:

The X-Cite Xylis XT720L is a broad spectrum illuminator with a range from 380-770nm. It has peaks at 385, 430, 475, 545, 635, 735nm.

Filters:

Filter Cubes:

In multi-band fluorescence imaging, the filter turret has to move between positions for each band. This is usually done on a per-tile basis. At about 400ms per move, this can add up, especially for a large scan at higher magnification. The Axioscan 7 has 2 multi-band cubes. If these can be used, it can reduce or eliminate these moves and reduce scan time. These can be used on the Axioscan 7 because it has the Colibri 7 switching LED source.

Filter No	Fluorochrome	Excitation (nm)	Beamsplitter (nm)	Emission (nm)

1	Empty (Brightfield)			
2	HE GFP	450-490	495	500-550
3	HE DsRed	538-562	570	570-640
4	Cy5	625-655	660	665-715
5	HE BFP	370-410	420	430-470
6	HE DAPI/GFP/Cy3.5/Cy7	375-395 455-483 583-600 720-750	405 493 611 762	410-440 501-547 618-650 770-800
7	HE DAPI/GFP/Cy3.5/Cy5/ Cy7	370-400 450-488 540-570 614-647 720-750	405 493 575 654 761	412-438 501-527 582-601 662-700 770-800
Pol	Circular polarizer and analyzer			
ND	6% Neutral Density Filter			

Fast Filter Wheel:

The fast filter wheel moves between filter positions about 10 times faster than the filter cube turret.

Need information here

Filter	Pass Peak and Width	Typical fluorophores
Empty (Brightfield)		
Single Channel 1		
Single Channel 2		
Single Channel 3		
Dual Channel 4		
Dual Channel 5		

Objectives:

Objective	Magnification	Immersion	Numerical Aperture	Correction Ring	Coverglass (mm)	Working Distance (mm)
Fluar M27	5X	Air	0.25		0.17	12.5
Pan Apo M27	10X	Air	0.45		0.17	2.1
Pan Apo M27	20X	Air	0.8		0.17	0.55
Pan Apo Korr M27	40X	Air	0.95		0.13-0.21	0.25
EC Pan-Neofluar Pol M27	20X	Air	0.5		0.17	2

Revision #4

Created 15 March 2024 14:37:09

Updated 20 March 2024 19:39:38