

Technical Specifications

Abbelight TIRF (SAFe M90)



Inverse widefield/TIRF microscope with LED and laser illumination and filter sets to image all conventional dyes. 4-color laser widefield EPI/HILO/TIRF illumination with up to $150 \times 150 \mu\text{m}^2$ field of view due to ASTER – fast scan technology. Equipped with two 5.3 Megapixel Orca Fusion sCMOS cameras for fast simultaneous 2- or 4-color imaging. Motorized stage for 5D-data acquisition, full environmental control for long-term live imaging (Room 1.105, Main Building).

(Last updated: January 2026)

Frame

Evident IX85 fully motorized stand

Objectives

- Evident 100x, 1.5NA, WD 0,12mm TIRF objective (UPLAPO100XOHR)
- Evident 60x, 1.42NA, WD 0,15mm objective (UPLXAPO60XO)

Lasers

- Oxxius LBX-405nm – 50mW
- Oxxius LBX-488nm – 40mW
- Oxxius LCX-561L – 100mW
- Oxxius LBX-638 – 100mW

Widefield illumination

- CoolLED pE-300, violet, blue and green excitation

Filters

- Reflector turret filter cube for CoolLED illumination

- Dual Camera Beamsplitter: Dichroic beamsplitter LP560
 - Dichroic beamsplitter LP640
- Filter wheel 1 (Camera T) and Filter wheel 2 (Camera R)
 - ZET405-488-561-640
 - ET445(58)
 - ET525(50)
 - ET600(50)
 - ET700(75)
 - Empty

Cameras

- Two Hamamatsu Orca Fusion (C14440-20UP), 5.3Mpix sCMOS cameras

Imaging modalities

- Laser widefield – EPI/HILO/TIRF with penetration depth calibration
- Up to 4 colour sequential imaging, 2 or 4 colour simultaneous imaging
- Time lapse, Multi-positioning, Z-stack, Experimental designer

XYZ stage

- Märzhäuser SCANplus IM with Tango controller, fully motorized XY stage
- IX85 focus Z drive and ZDC TruFocus unit

Environmental control

- TOKAI HIT warming box + stage top temperature and CO2 incubator

Software

- Acquisition software: Abbelight – Neo
- Stand control: Evident IX85 application control by Abbelight