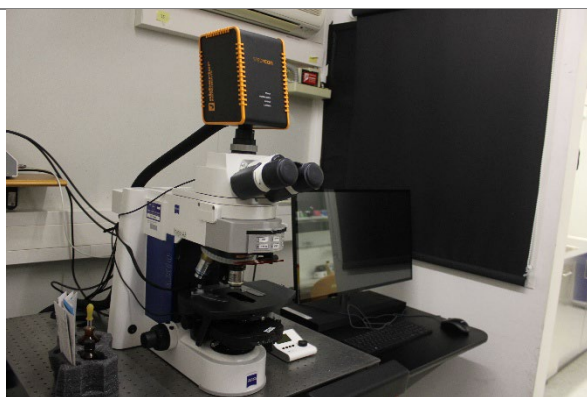


Technical Specifications

Abberior Instruments STEDYCON



(Last updated: January 2026)

Installed 2018. Upright point scanning microscope with 2 avalanche photodiode detectors for dual-channel 2D STED (orange, dark red) or conventional confocal imaging of 3 dyes (green, orange and dark red). Piezo-driven z-focus for 3D acquisition, manual XY stage for standard slides. Widefield illumination: halogen lamp, CoolLED pE-2

Frame

Zeiss Axio Imager.A2, upright, manual

Objectives

- EC Plan-Neofluar 10x/0.3 M27 (WD 1 5.2 mm)
- EC Plan-Neofluar 40x/1.3 Oil (WD 0.21 mm)
- alpha Plan-Apochromat 100x/1.46 Oil DIC M27 (WD 0.11 mm)

Lasers

- 488 nm: pulsed diode laser, output 0.2 mW @ 40 MHz (max. 5 mW), > 3 pJ/pulse (< 150 ps)
- 561 nm: pulsed diode laser, 40 MHz
- 640 nm: pulsed diode laser, output 1.2 mW @ 40 MHz (max. 5 mW), > 20 pJ/pulse (< 150 ps)
- 775 nm (STED depletion laser): pulsed, output 1.25 W, > 30 nJ/pulse (jitter < 100 ps)

Widefield illumination

- Fluorescence: CoolLED pE-2 (365, 470 and 550 nm)
- Transmitted light: Halogen lamp HAL 100 (100 W)

Filters (widefield illumination)

- DAPI/FITC/TxRed nm LED Triple HC Filterset (AHF F66-L412)
- Semrock FF01-378/474/57
- Semrock FF409/493/596
- Semrock FF01-432/523/702

Detection System (STED/confocal)

- Avalanche photodiodes with gated detection and bandpass filters
APD1: 650-700 nm (Chroma 675/50 ET Bandpass)
APD2: 500-550 nm, 580-625 nm (dual band, Semrock Em01-R488/568 + SP01-633RU)
- QUAD beam scanner with 4 galvo mirrors (90 μ m x 80 μ m with the 100x objective), 512 x 512 pixel up to 1.1 fps; line frequency up to 800 Hz
- Fixed confocal pinhole (1.1 Airy units for 100x/1.46 NA, 1.7 Airy units for 63x/1.4 NA)

Stage and focusing devices

- P-721 PIFOC Piezo-driven z focus (travel range 100 μ m, resolution 0.7 nm, reproducibility +/- 5 nm, step time 7 ms)
- Motorized (not controllable by the software) XY-stage 75 x 50/240°, insert for standard slides (76 x 26 mm)

Recommended dyes and highest theoretical resolution achievable

Abberior STAR RED	41 nm
Abberior STAR ORANGE	54 nm
Abberior STAR 580	60 nm
Abberior STAR 600	72 nm
Abberior STAR 635	42 nm
Abberior STAR 635P	41 nm
Alexa Fluor 594	60 nm
Alexa Fluor 647	30 nm
ATTO 590	60 nm
ATTO 633	42 nm
ATTO 647N	42 nm

Software

- STEDYCON Web interface running on Windows 10 (64-bit), STEDYCON firmware 7.1.53