



# Zeiss Elyra Super Resolution Microscope Condensed User Guide

The Zeiss Elyra is a microscope that supports SR-SIM, TIRF and PALM/STORM localization technologies. *This system will not accept round dishes > 35 mm in diameter.*

## Turn on Sequence

1. If the computer is off, turn it on and let it boot.
2. (If you want to use standard fluorescence for focusing, turn on the X-cite Illuminator.)
3. Turn on the System outlet switch.
4. Turn on the Components outlet switch.
5. Log in to the computer.
6. Open Zen.
7. Log in to Zen. Push Start System button.
8. Use 63X for SIM experiments and 100X for STORM/PALM or TIRF experiments.
9. Find focus via Locate tab.
10. On Acquisition tab, turn on lasers required.

## Turn off Sequence

1. Save your data and transfer it to the fileshare.
2. Turn off Definite Focus if you are using it.
3. Remove your sample and clean off your objective.
4. Exit Zen.
5. Log out and shut down computer.
6. Turn off the Components outlet switch.
7. Turn off the System outlet switch.
8. Turn off the X-cite illuminator (if you used it).

## Standard Objective Specifications

Mag	NA	Immersion medium	CS thickness (mm)	WD (mm)	Objective Type	Trans > 0.5
10x	0.3	Air	0.17	5.2	EC Plan Neofluar	350-1300nm
20x	0.8	Air	0.17	0.55	Plan-Apochromat	370-1050nm
63x	1.4	Oil	0.17	0.19	Plan-Apochromat	400-950nm
100x	1.46	Oil	0.17	0.11	alpha Plan-Apochromat	380-980nm

## Aligning Stage Inserts

1. Pull out fiber optic from back of X-cite box one notch.
2. Put blank slide on top of empty objective position – make sure you are not on the objective recognition button.
3. Open Setup > StageInsertAlignment.czi and reuse settings.
4. Put blank slide on stage.
5. Insert Bertrand Lens. Unscrew fiber optic at microscope and pull out to focus reflections.
6. Align reflections.
7. When you are done, remove Bertrand Lens.

## Aligning 100x Ring for TIRF

1. Pull out fiber optic from back of X-cite box one notch.
2. Make sure that the 100x objective is in place.
3. Open Setup > TIRFringAlignment.czi and reuse settings.
4. Put water-filled glass-bottom dish on stage and focus to coverslip (with sharpie mark).
5. Press TIRF button and continuous scan.
6. Put in Bertrand lens and minimize image intensity at back aperture (corresponds to reducing unwanted reflections from the TIRF beam).
7. Take out Bertrand lens and push in fiber optic at back of X-cite box.

## Troubleshooting

1. Zen has issues when there is too much data in the memory stack. When you are acquiring large datasets, always save your data before reconstructing.
2. Zen not starting? First try complete shut-down – computer and outlet switches. If this doesn't work, try renaming this folder:

c:\Users\YourNetID\AppData\roaming\carl zeiss\AimApplication