

# Zeiss LSM 880 Inverted (i880) Condensed User Guide

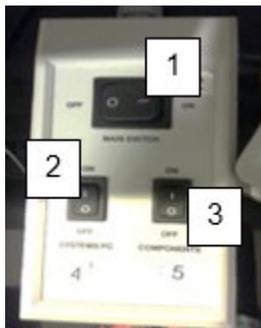
The Zeiss LSM880 is a laser scanning confocal microscope with full confocal and multiphoton capability. The confocal detectors are spectrally resolved and can be used with either the standard (single photon) excitation lines or the multiphoton excitation lines. The non-descanned (NDD) detectors can only be used with multiphoton excitation.

## Full Turn on Sequence (First one on)

1. If computer is off, turn it on and let it boot.
2. Turn on the main switch (1).
3. Turn on the Systems/PC switch (2). (When touchscreen has booted, adjust heating and CO<sub>2</sub> under Microscope > Incubation if applicable.)
4. Turn on the Components switch (3).
5. Log in to the computer.
6. Start Zen and select *Start System* Button.
7. Turn on laser lines you will be using. (*Note that the Argon and multiphoton lines take ~5 min to turn on. You can follow the warm-up progress by selecting the laser and the Laser Properties.*)

## Partial Turn on Sequence (Microscope already on)

1. Log in to the computer.
2. Start Zen and select *Start System* Button.
3. Turn on laser lines you will be using.



Startup switches 1- Main, 2-System/PC, and 3-Components

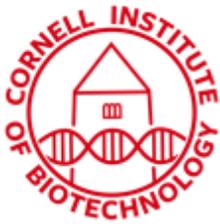
## Full Turn off Sequence (Last one on)

1. Save your data and transfer it to the fileshare.
2. Remove sample and clean your objective. (*If using incubation, turn temperature and CO<sub>2</sub> regulation off and close CO<sub>2</sub> tank using main gray valve only.*)
3. Turn off lasers.
4. Exit Zen.
5. Log out of the computer.
6. Turn off the Components switch (3).
7. Turn off the Systems/PC switch (2).
8. Wait a few minutes for the Argon laser to cool. Turn off the main switch (1).
9. DO NOT turn off computer.

## Partial Turn off Sequence

(Someone else is scheduled after your time slot)

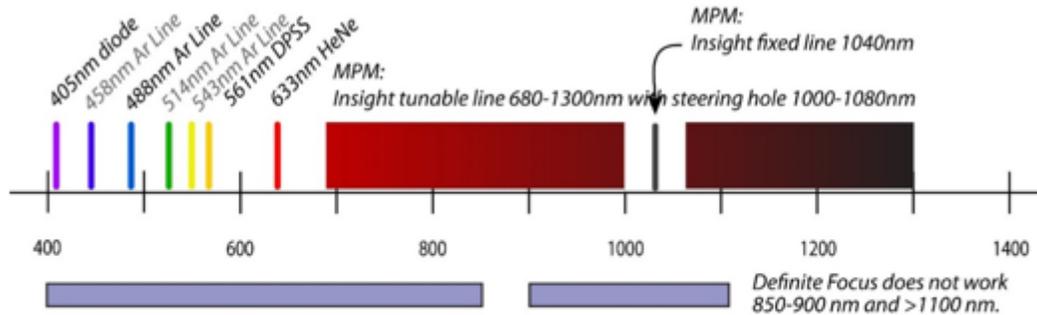
1. Save your data and transfer it to the fileshare.
2. Remove your sample and clean off your objective. (*If using incubation, turn temperature and CO<sub>2</sub> regulation off and close CO<sub>2</sub> tank using gray handle only.*)
3. Turn off lasers.



4. Exit Zen.

5. Log out of the computer.

## Laser Lines



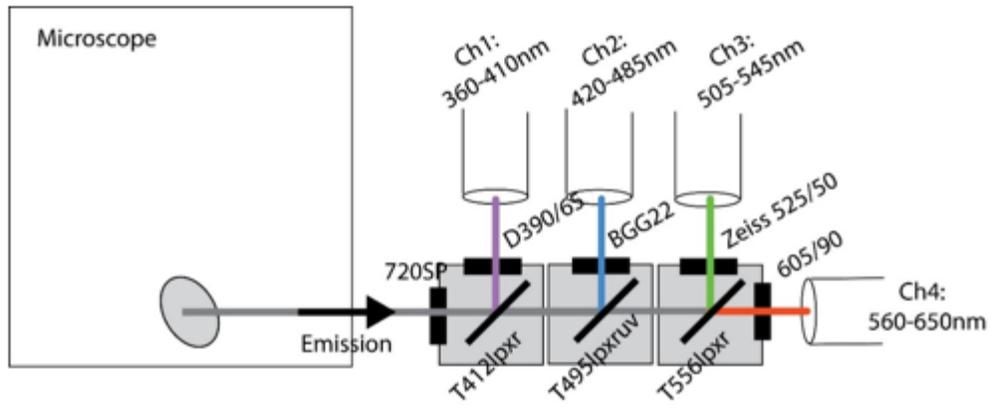
Available laser lines on the i880 include confocal lasers covering the visible wavelengths of the spectrum, a tunable multiphoton laser line and a fixed 1040 nm laser line in the near infrared region.

## Standard Objective Specifications

Mag	NA	Immersion medium	CS thickness (mm)	WD (mm)	Objective Type	Trans > 0.5 (nm)
10x	0.3	Air	0.17	5.2	EC Plan-Neofluar	350-1200
20x	0.5	Air	0.17	2.0	EC Plan-Neofluar	350-1250
10x	0.45	Water	0.17	1.8	C-Apochromat	350-1200
32x	0.85	Water	0-0.17	1.1	C-Achroplan	450-1300
40x	1.2	Water	0.14-0.19	0.28	C-Apochromat	350-1150
40x	1.4	Oil	0.17	0.13	Plan-Apochromat	380-1200
63x	0.75	Air	0-1.5	1.7	LD Plan-Neofluar	350-950
63x	1.4	Oil	0.17	0.19	Plan-Apochromat	350-1300

## Nondescanned Detector (NDD) Filters

**\*Do not use any laser lines <700 nm with the NDD detectors!**



*NDD channels showing emission detection wavelengths and corresponding excitation filter – dichroic mirror – barrier filter combinations*