

System Power Guide - 2023

The following sections outline the order of operations for powering each of our systems on and off. Please follow them closely to prevent damage and ensure each performs as expected. The current list of systems is:

[Nikon A1R](#)

[Nikon C2](#)

[Leica SP8-tauSTED](#)

[DeltaVision Ultra Widefield](#)

[Andor CSU-X1/TIRF](#)

[Screening Stations](#)

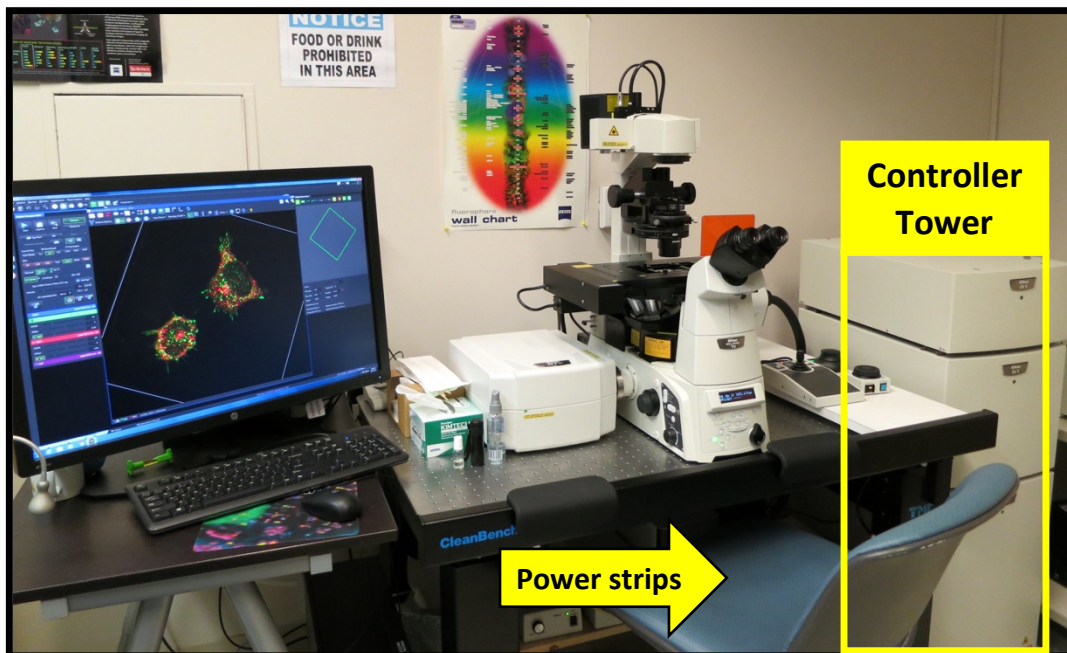
Nikon A1R Laser Scanning Confocal

This section will cover:

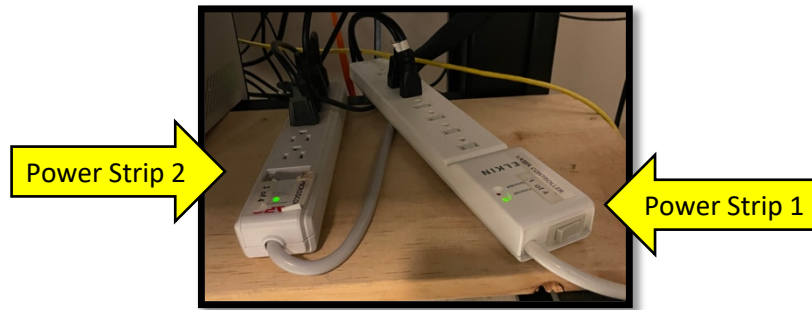
- A. Powering up the Nikon A1R
- B. Live Cell Accessories
- C. Cleaning and Powering Down

A. The Power On sequence for this microscope is FIVE (5) STEPS

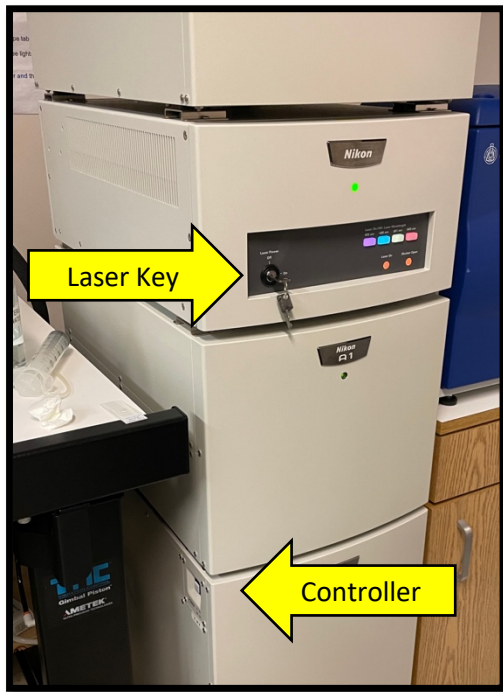
- 1) Power Strip 1: sends power to the confocal control tower
- 2) Laser Key and Confocal Controller
- 3) Power Strip 2: sends power to the microscope components
- 4) PC
- 5) Evaluate objectives



STEP 1: POWER STRIP 1



STEP 2: LASER KEY AND CONFOCAL CONTROLLER



A) After turning on Power Strip 1, wait a short time (10-20s) and turn on the Laser Key.

B) Wait 30 seconds and turn on the Controller

****These two steps must be done with a pause between to allow for initialization of the laser and proper communication to the controller. ****

STEP 3: POWER STRIP 2

STEP 4: PC

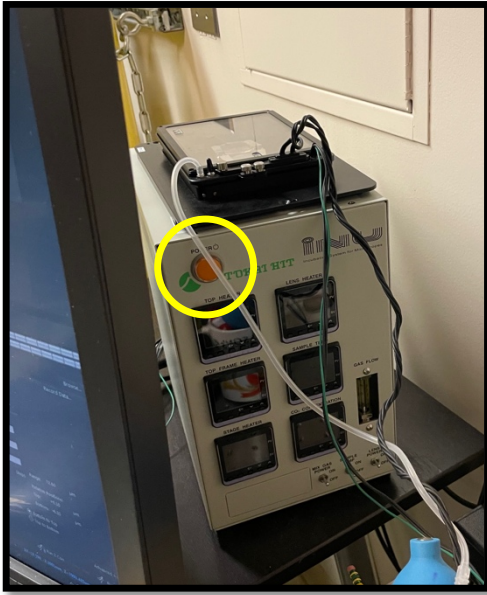
STEP 5: OBJECTIVES

Please look at all objectives on the microscope and evaluate for oil, dust, or damage. Clean any lens that needs it and report issues to BISR staff.

B. Live Cell Accessories:

If you plan to image live cells you will need to turn on and install the incubator chamber thirty (30) minutes prior to use.

You are responsible for turning it off when done and uninstalling it from the microscope.



Power On: Press the orange button on the incubator controller (located behind the monitor)

Remove current stage adapter: A short, green handled screwdriver is stored on the microscope, behind the stage. Use this to remove the three (3) plastic screws from the stage adapter, freeing it.

Install objective warmer: If you will be using an oil immersion lens, please carefully place the warming collar around the lens

Install incubation chamber onto stage: use the three (3) plastic screws to affix the incubator to the stage, being careful not to over tighten.

Fill passive humidity tray: add roughly 40-50ml of sterile water to the silver channel on the inside of the incubation chamber. Add water until there are visible bubbles from the port on the back left.

Turn on CO2 supply: Turn the knob at the CO2 tank. DO NOT touch any regulators knobs.

AFTER USE:

- 1) Turn off CO2 supply
- 2) Empty passive humidity tray
- 3) Remove incubation chamber from stage
- 4) Remove objective warmer
- 5) Install universal stage adapter
- 6) Turn off incubator control box

C. The Power OFF sequence for this microscope is FIVE (5) STEPS

- 1) Software and PC: Be sure all files are removed if needed
- 2) Power Strip 2: cuts power to the microscope components
- 3) Confocal Controller and Laser Key
- 4) Power Strip 1: cuts power to the confocal control tower
- 5) Clean all oil immersion lenses used during your session

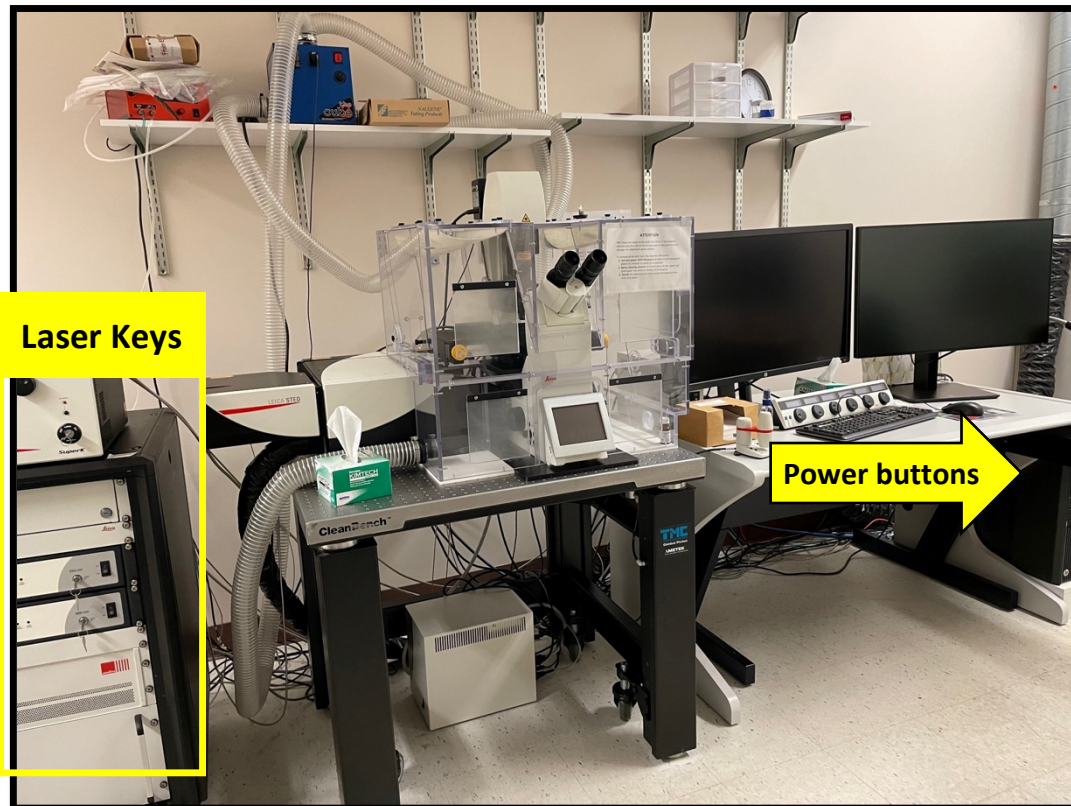
LEICA SP8 tau-STED

This section will cover:

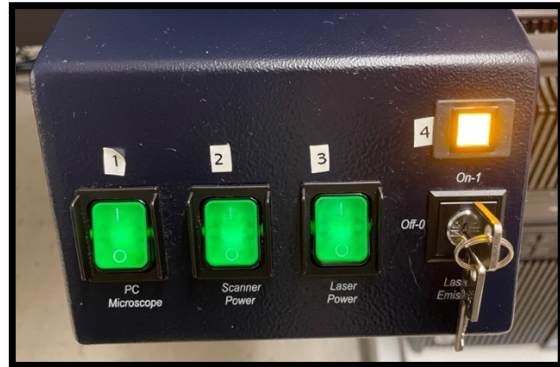
- A. Powering up the Leica SP8
- B. Cleaning and Powering Down

A. The Power On sequence for this microscope is FOUR (4) STEPS

- 1) Power Buttons
- 2) Laser Keys
- 3) Widefield Lamp
- 4) Evaluate objectives

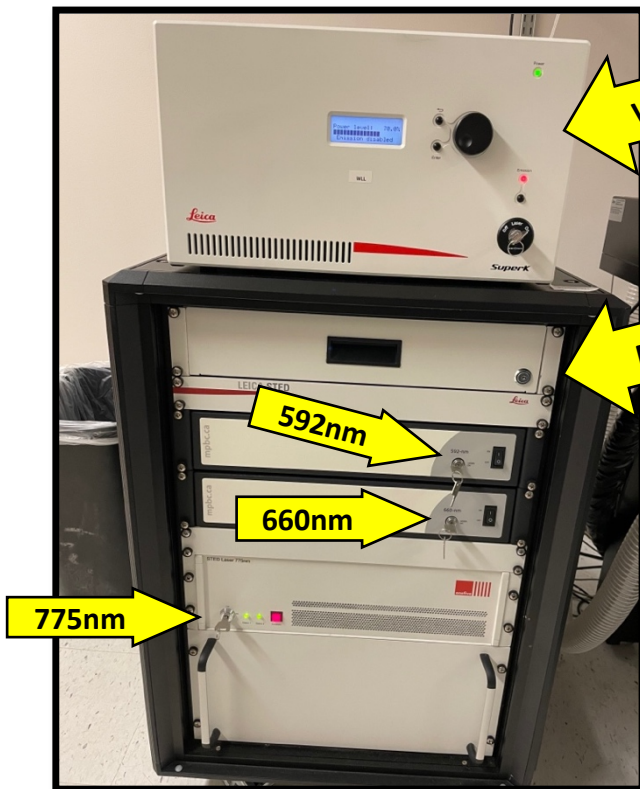


STEP 1: POWER BUTTONS



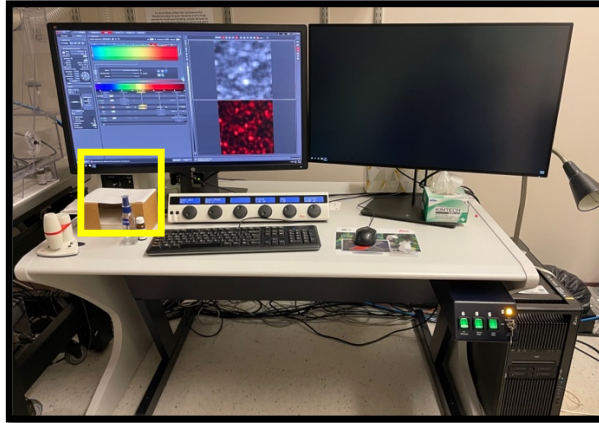
- A) Turn on #1 (PC and Microscope); wait for microscope to initialize
- B) Turn on #2 (Scanner)
- C) Turn on #3 (Laser power); wait 10-20s
- D) Turn Key

STEP 2: LASER KEYS



**** You only need to turn on the lasers you will be using during your session ****

STEP 3: WIDEFIELD LAMP



STEP 4: OBJECTIVES

Please look at all objectives on the microscope and evaluate for oil, dust, or damage. Clean any lens that needs it and report issues to BISR staff.

B. The Power OFF sequence for this microscope is FOUR (4) STEPS

- 1) Software and PC: Be sure all files are saved. Software will take about two minutes to close.
- 2) Laser Keys: Turn back off the keys you turned on.
- 3) Power buttons:
- 4) Clean all oil immersion lenses used during your session

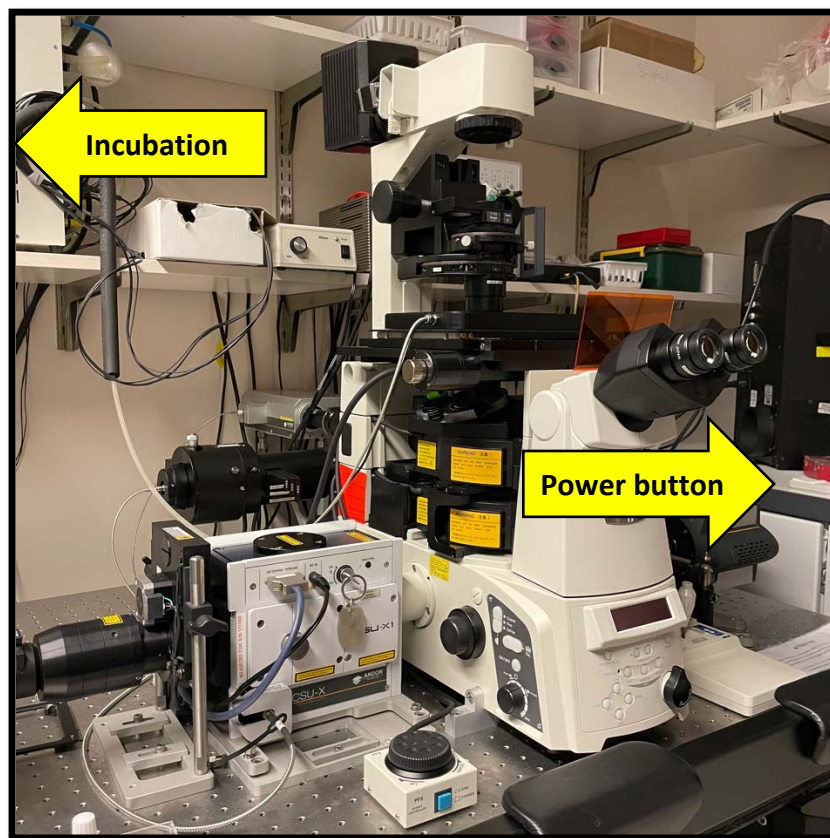
Andor CSU-X1 Spinning Disk Confocal / TIRF

This section will cover:

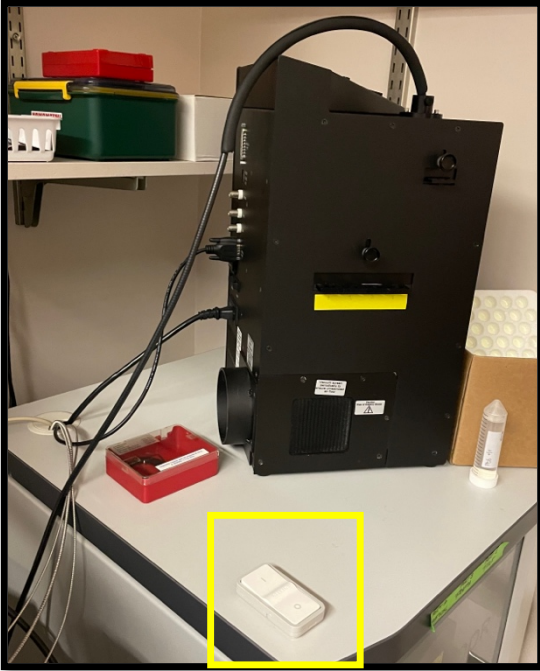
- A. Powering up the Andor X1/TIRF
- B. Live Cell Accessories
- C. Cleaning and Powering Down

A. The Power On sequence for this microscope is FOUR (4) STEPS

- 1) Power Button 1: sends power to the microscope and controllers
- 2) Widefield Lamp
- 3) PC
- 4) Evaluate objectives



STEP 1: POWER BUTTON



Power Button remotely turns on:

- Microscope
- CSU-X1 Spinning Disk Confocal
- Laser Launch
- FRAP controller
- Cameras
- Motorized TIRF arm (through microscope)
- Filter wheels

STEP 2: WIDEFIELD LAMP



The widefield lamp has TWO (2) power switches that both need to be turned on.

STEP 3: PC

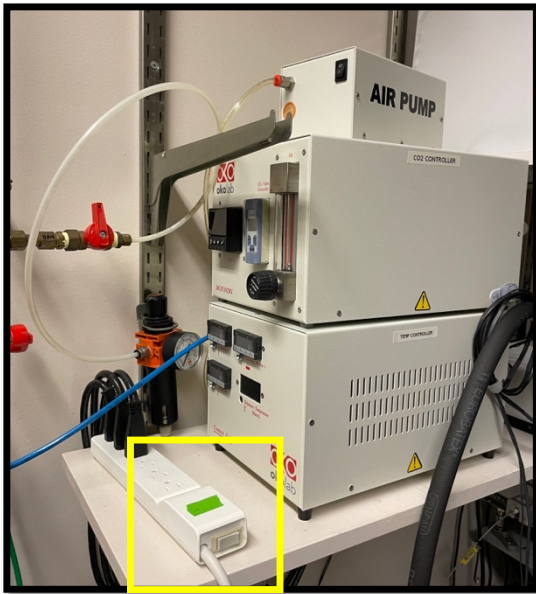
STEP 4: OBJECTIVES

Please look at all objectives on the microscope and evaluate for oil, dust, or damage. Clean any lens that needs it and report issues to BISR staff.

B. Live Cell Accessories:

If you plan to image live cells you will need to turn on and install the incubator chamber thirty (30) minutes prior to use.

You are responsible for turning it off when done and uninstalling it from the microscope.



Power On: Turn on all three control boxes (located on the shelf) with the power strip
Remove current stage adapter: Loosen the fixing wedge on the back left corner of the stage opening to remove any current sample adapter.
Confirm objective warmer: If the objective warmer is not currently installed, please carefully place the warming collar around the lens
Install incubation chamber onto stage: The chamber is stored on the shelf behind the microscope in a dedicated box.
Turn on CO2 supply: Turn the knob at the CO2 tank and at the manifold by the incubator. DO NOT touch any regulators knobs.

AFTER USE:

- 1) Turn off CO2 supply
- 2) Remove incubation chamber from stage
- 3) Install universal stage adapter
- 4) Turn off incubator control boxes

C. The Power OFF sequence for this microscope is FOUR (4) STEPS

- 1) Software and PC: Be sure all files are removed if needed
- 2) Widefield Lamp
- 3) Power Button
- 4) Clean all oil immersion lenses used during your session

. When covering the microscope, DO NOT cover hot lamphouse in the back

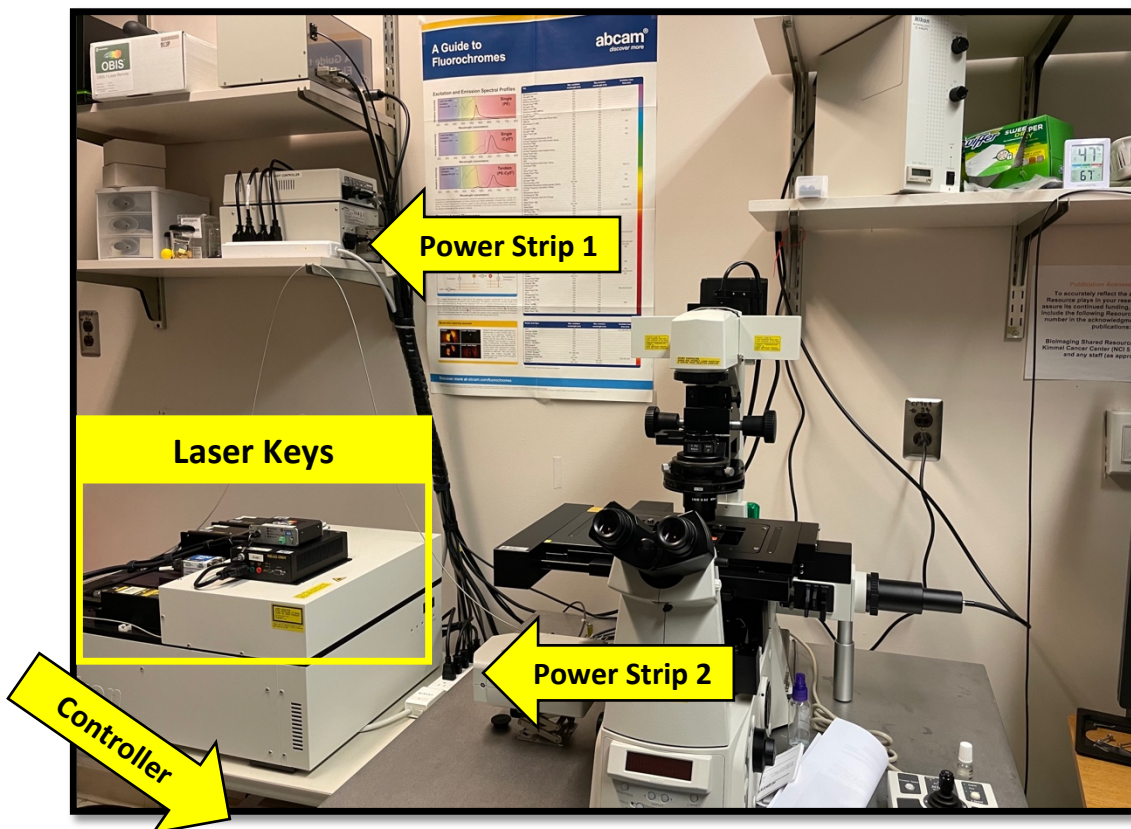
Nikon C2 Laser Scanning Confocal

This section will cover:

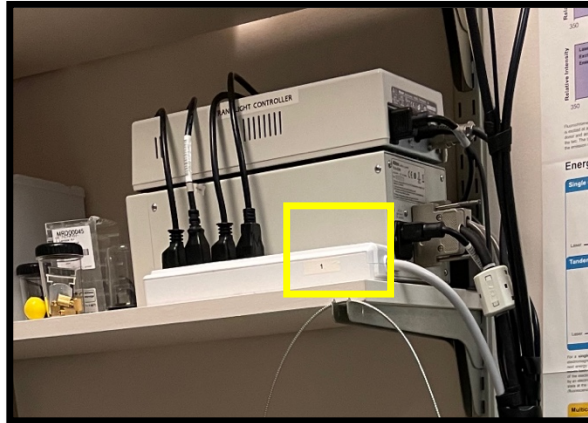
- A. Powering up the Nikon C2
- B. Cleaning and Powering Down

A. The Power On sequence for this microscope is SEVEN (7) STEPS

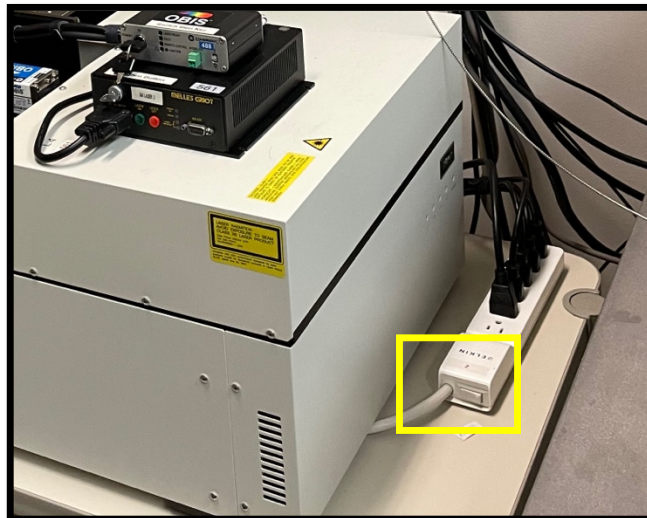
- 1) Power Strip 1: sends power to the laser unit and control tower
- 2) Power Strip 2: sends power to the microscope components
- 3) Laser Keys
- 4) Confocal Controller
- 5) Widefield Lamp
- 6) PC
- 7) Evaluate objectives



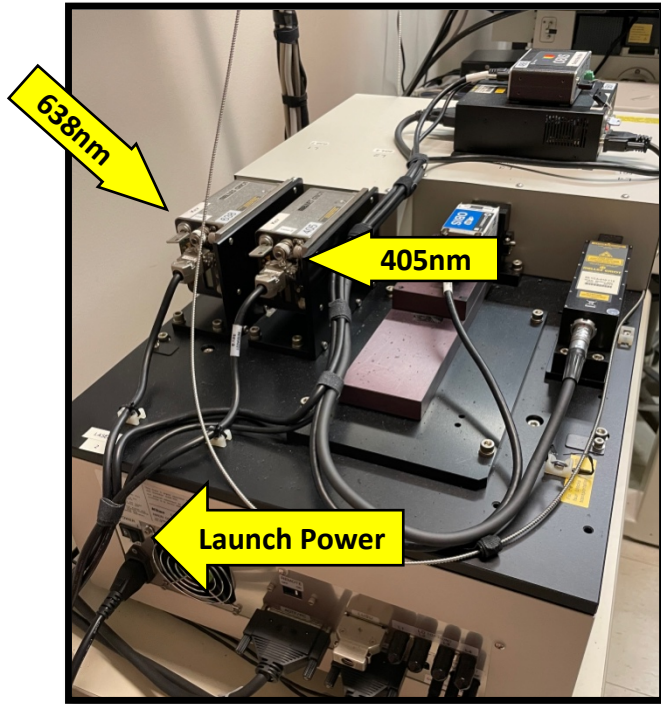
STEP 1: POWER STRIP 1



STEP 2: POWER STRIP 2



STEP 3: LASER KEYS



Power on the Launch

638nm Laser

Turn the key

405nm Laser

Turn the key

561nm Laser

Turn the key

THEN push the green button

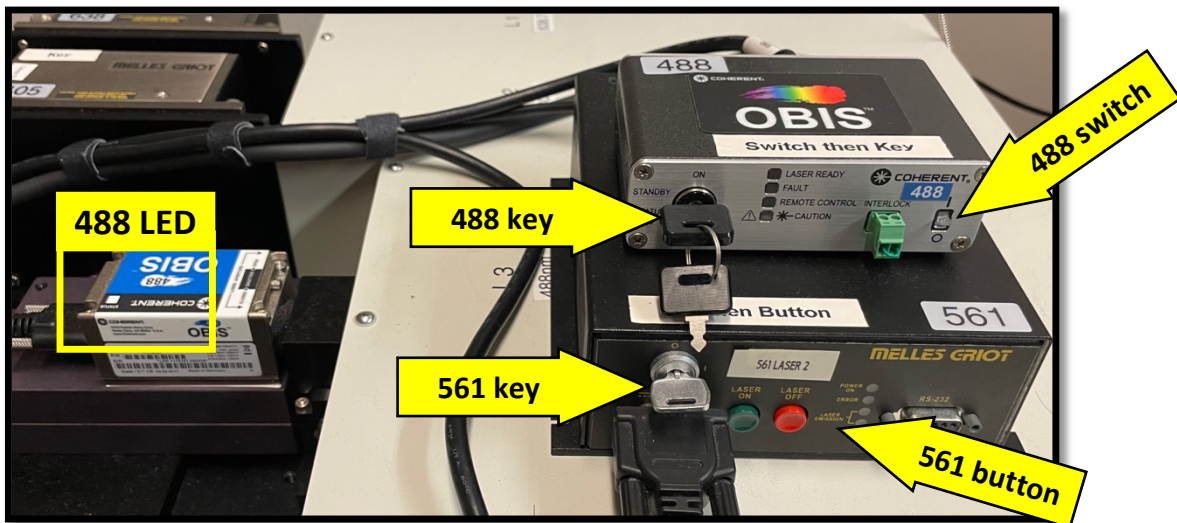
488nm Laser

Flip the switch

WAIT until the LED on the Laser head is

SOLID WHITE

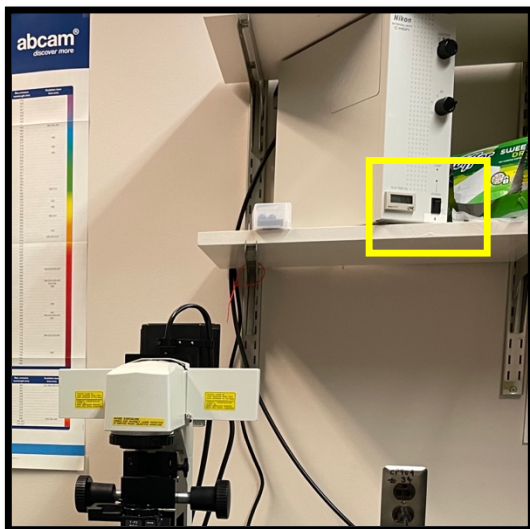
Turn the key (LED should turn BLUE)



STEP 4: CONFOCAL CONTROLLER



STEP 5: WIDEFIELD LAMP



STEP 6: PC

STEP 7: OBJECTIVES

Please look at all objectives on the microscope and evaluate for oil, dust, or damage. Clean any lens that needs it and report issues to BISR staff.

B. The Power OFF sequence for this microscope is SEVEN (7) STEPS

- 1) Software and PC: Be sure all files are removed if needed
- 2) Widefield Lamp
- 3) Confocal Controller
- 4) Laser Keys
- 5) Power Strip 2: cuts power to the microscope components
- 6) Power Strip 1: cuts power to the confocal control tower
- 7) Clean all oil immersion lenses used during your session

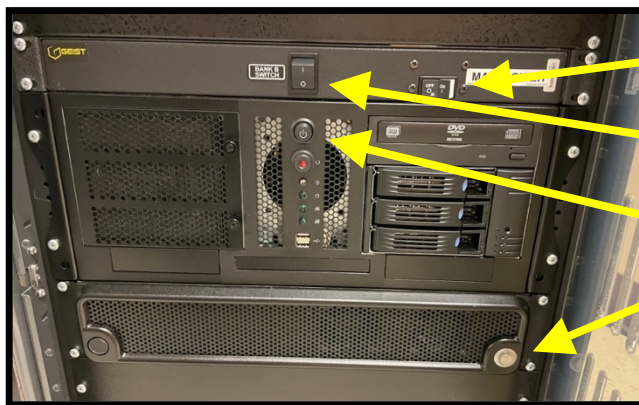
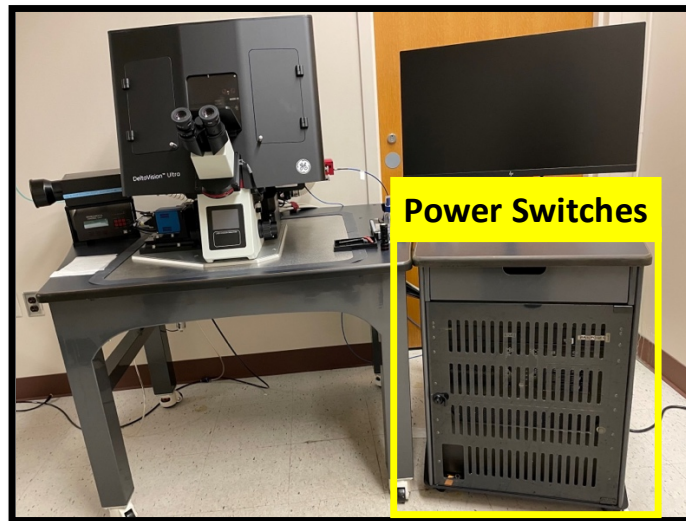
DELTAVISION ULTRA WIDEFIELD MICROSCOPE

This section will cover:

- A. Powering up the DeltaVision Ultra
- B. Live Cell Accessories
- C. Cleaning and Powering Down

A. The Power On sequence for this microscope is FIVE (5) STEPS

- 1) Main Power
- 2) Bank B Power
- 3) PC
- 4) Controller Power
- 5) Evaluate objectives



STEP 1: MAIN POWER

STEP 2: BANK B POWER

STEP 3: PC

STEP 4: CONTROLLER POWER

STEP 5: OBJECTIVES

Please look at all objectives on the microscope and evaluate for oil, dust, or damage. Clean any lens that needs it and report issues to BISR staff.

B. Live Cell Accessories:

If you plan to image live cells you will need to turn on the incubator thirty (30) minutes prior to use.

You are responsible for turning it off when done.



Power On: Turn on the incubator controller (switch is located on the back on the box, left of the microscope)
Turn on CO2 supply: Turn the knob at the CO2 tank. DO NOT touch any regulators knobs.

AFTER USE:

- 1) Turn off CO2 supply
- 2) Turn off incubator control box

C. The Power OFF sequence for this microscope is FIVE (5) STEPS

- 1) Software and PC: Be sure all files are removed if needed
- 2) Controller Power
- 3) Bank B Power
- 4) Main Power
- 5) Clean all oil immersion lenses used during your session

SCREENING STATION A: WIDEFIELD

This section will cover:

- A. Powering up the station
- B. Cleaning and Powering Down

A. The Power On sequence for this microscope is TWO (2) STEPS

- 1) Brightfield Lamp
- 2) Widefield Lamp (please do not turn on if hot – allow to cool)



B. The Power OFF sequence for this microscope is TWO (2) STEPS

- 1) Brightfield OFF
- 2) Widefield OFF (please do not turn off <30min after starting)

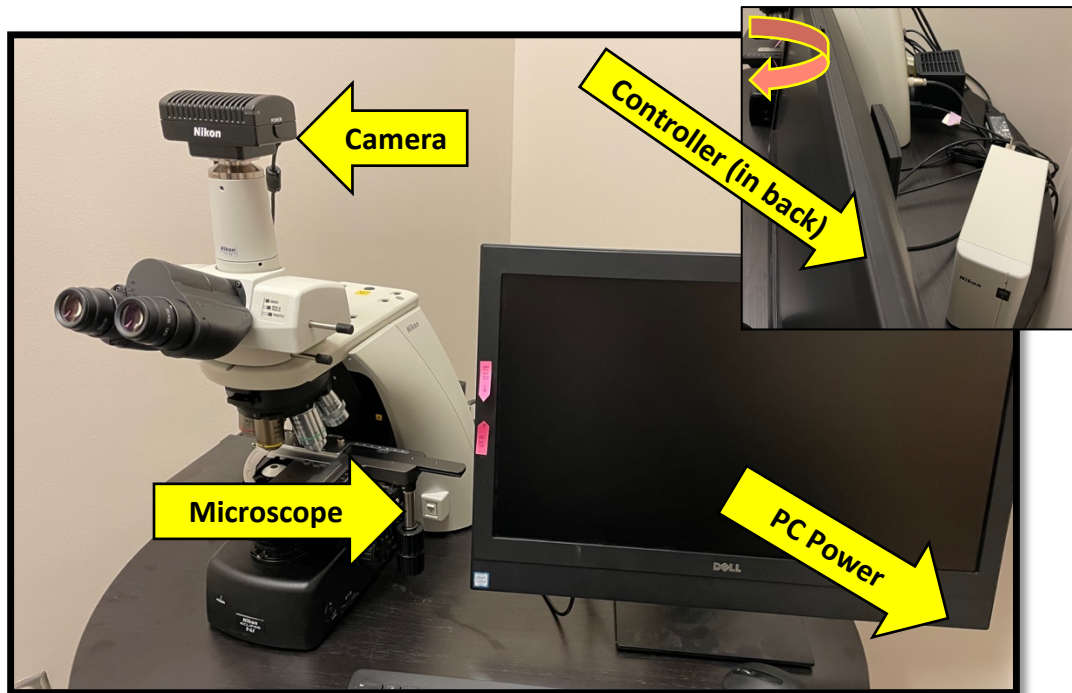
SCREENING STATION B: BRIGHTFIELD

This section will cover:

- A. Powering up the station
- B. Cleaning and Powering Down

A. The Power On sequence for this microscope is FOUR (4) STEPS

- 1) ALL-IN-ONE PC
- 2) Microscope
- 3) Control Box
- 4) Camera



STEP 1: PC POWER

STEP 2: MICROSCOPE

STEP 3: CONTROLLER

STEP 4: CAMERA

B. The Power OFF sequence for this microscope is FOUR (4) STEPS

- 1) Software and PC - Be sure all files are removed if needed
- 2) Camera
- 3) Controller
- 4) Microscope