

Instructions for the GE DeltaVision OMX super resolution microscope

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Check-in and Start up

If the OMX and the computer are already on, turn the monitors on, and skip over to [log in](#).

1. on the OMX, press ON for MAIN POWER to start the OMX hardware
2. turn on surge protector on the desk to power up computer and monitors
3. log in (currently as worx)
4. launch AcquireSR
5. do File > Setting..., to confirm the objective you will use and BGR polychroic drawer are correctly selected, also check the selection for "Aquisition Order" (usually all channels than z) and "Focus when scan starts" (usually middle) near the bottom of the panel
6. do Instrument > Status..., click "Restart Hardware"
 - updates are shown in the OMX Instrument Status Information window and the Status pane on the lower left corner of the UI will show "HW: Restarting..."
 - after about 2 min, the Information window will show "restart HW success: true" and the Status pane will show "HW: Running"
 - check the [appendix](#) if you encounter errors
7. make sure it is at least 5 min after turning ON the OMX hardware, then press "Restart All Cameras"
 - check the [appendix](#) if you encounter camera errors
8. on the OMX, press LASER POWER switch to 1 (on) and turn the key to 1 (on); if needed, press the ENVIRONMENTAL CONTROLLER button to turn it on



Mount a sample

1. check that the stage is clear of the objective lens before activating Z touchdown, e.g., do Instrument > Center stage
2. use Z touchdown to take the stage to 8000, can also use Instrument > Move stage...
3. apply oil
4. move stage over to ROI and then lower the stage until coverglass is in contact with oil; can use joystick, Instrument > move stage... or Z touchdown with common preparations e.g., 6400 for slide
5. can use UltimateFocus or software autofocus in combination with Mosaic to locate specimen

Unmount a sample

1. raise stage to 8000
2. remove specimen
3. Instrument > Center stage
4. drop stage down to <5000 to get access to the objective lens
5. remove excess oil on the objective lens with lens paper
6. clean objective lens with chloroform and cotton swabs

Check out

1. do [unmount sample](#)
2. take stage to 24500
3. do routine checkout, unless you need to shutdown the OMX
 - A. routine checkout
 - i. quit AcquireSR: click Yes, but do not click "Yes, shutdown cameras"
 - ii. copy your data to external storage media or network file servers
 - iii. submit your usage using the google form on our [website](#)
 - iv. do System > Log out worx and then turn off the monitors
 - v. on the OMX, flip key to 0 (off), press 0 (off) for LASER POWER; turn off ENVIRONMENTAL CONTROL if it is on
 - B. shutdown
 - i. quit AcquireSR: click "Yes, shutdown cameras"
 - ii. on the OMX, check to see that the camera computers are off; if not turn off camera computers manually as described below
 - iii. if you forget to shutdown the camera computers when quitting AcquireSR or camera computers did not shutdown as requested, shut them down via remote access (desktop OMX folder > cam1 to cam3)
 - double click camn to remote into that camera computer
 - click on Start, then select Windows Security
 - click on the red Power Off button on the lower right to shutdown the computer
 - iv. copy your data to external storage media or network file servers
 - v. submit your usage using the google form on our [website](#)
 - vi. do System > Shutdown to power down the computer
 - vii. turn off the surge protector
 - viii. on the OMX, flip key to 0 (off), press 0 (off) for LASER POWER; turn off ENVIRONMENTAL CONTROL if it is on
 - ix. press OFF for MAIN POWER
4. clean up the work area

Appendix

Content: errors occur during **"Restart Hardware"** and **"Restart All Cameras"** • **.dv files**

Workarounds for errors occur during start up

- "Restart Hardware"
 - joystick = Not Found or null-null
 1. wait for the restart to finish and see if the software will reconnect the joystick; in case there is no reconnection or the joystick remains non responsive after reconnection, do the following procedure
 2. unplug the joystick USB cable at the side of the monitor
 3. plug it back
 4. restart hardware
- "Restart All Cameras": STOP and contact Facility staff if the following errors happen
 - Camera Cam[1,2,3] Version: Serial: 31nnnnnnnn
 - less than 3 cameras detected, or any camera returns a "null"

working with dv file

- use ImageJ with Bio-Formats plugins