

Leica DMRB Research Microscope with SPOT High Resolution Digital Color Camera

Instructions for Use:

- Fill out Log Sheet:
 - Student Name(s)
 - Course # (BIOS 405) in the “Charge to” column
 - Yes or No in the 100X Objective column
- Turn on power switches:
 - Main power switch
 - Transmitted light power switch
- Light source rheostat 100% open (rotate dial toward you so light is brightest)
- Adjust filter pack
 - 1st filter = daylight blue ⇒ push in
 - 2nd filter don’t use ⇒ keep out
 - 3rd filter = neutral density ⇒ push in
 - 4th filter = neutral density ⇒ push in
- Rotating polarizer under the stage should be rotated back, out of alignment with the condenser.
- Condenser should be set on “H” (which stands for brightfield in some German word)
- Put the 10X objective in place.
- Prism set should be set on “HF”.
- Dichromatic filter should be set at “2”.
- Put a microscope slide on the stage and adjust it so that the specimen is in focus through the oculars.

- Perform the “**Koehler illumination**” procedure to align the light source, condenser and stage so that the specimen and light are in the same plane:
 - Use field diaphragm on the left side of the scope to first close the aperture and re-open it to about 50%.
 - Use the condenser focus knob on the left side to focus the edge of the aperture so that it is sharp.
 - Use the two condenser centration knobs to align the aperture so that it is centered in the field of view by successively opening it and adjusting it until it is almost completely open and completely centered.
 - OPTIONAL: Remove the right eyepiece and use the “upper dial” to set the aperture to the best contrast/resolution; return eyepiece when finished.

- Turn on the SPOT camera using the switch on the box on the table.
- Turn on the computer using the power switch on the CPU.
- On the desktop, double-click the “Spot Advanced” icon to activate the software.
 - Click the white balance icon to set the background to white.
 - Use the “Dweezil” image set-ups from the pull-up menu on the lower right.
 - Click the Exposure Time icon (image type should be brightfield-transmitted light)
 - Click the Get Image (top) icon to take a picture
 - Image will likely be out of focus
 - Click the focus icon and then right-click on the box on the image to bring up a dialog box for real-time focusing
 - Using the course and/or fine focus on the microscope to focus the image in the dialog box
 - Click the top icon to take another picture
 - Save the image as a TIFF file and indicate the magnification of the image in the filename (along with any other descriptive information, as appropriate).
- Save your images to a Zip disc.
- Shut down:
 - Turn off the computer.
 - Turn off the camera.
 - Turn off the microscope.