

Z15 Nikon optiphot 200 – calibration

TL;DR: ctrl-shift-O; mag 100x pixelsize: 0.124348um ; 141201ksu

When the computer hosting the NIS software is restarted, then the calibration of the scale-bars is lost, distances are shown in pixels (px). A calibration sequence restores display of distances in micrometer.

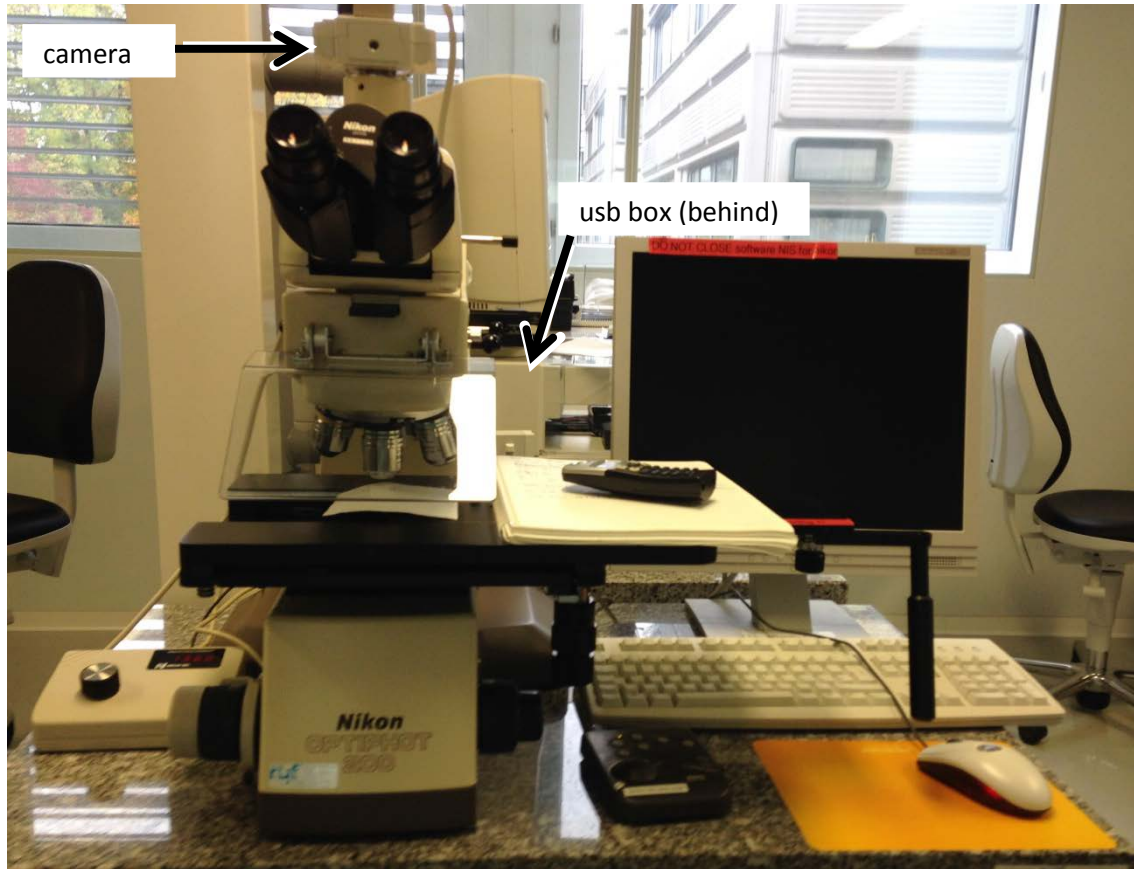
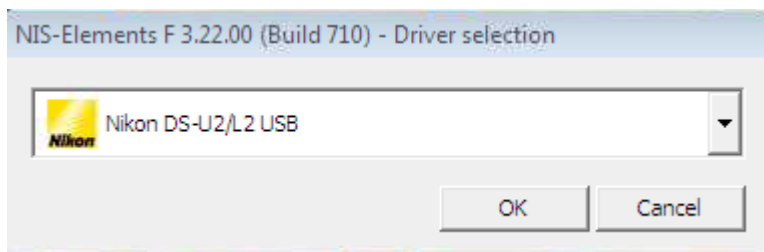


Fig 1: Microscope Nikon optiphot 200, camera sitting on top, usb box sitting behind microscope.

When you reboot the computer by necessity, or because a previous user has disregarded the request of not quitting the NIS software and/or not shutting down the computer, you might get a popup message:

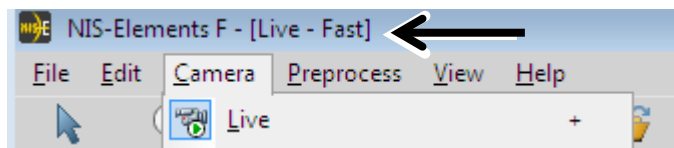


This means that the computer cannot establish communications with the usb box, which sends it the video feed from the camera. To remedy, unplug the power cord from the usb box behind the microscope, wait 4s or however long you are inclined to be patient, then replug.

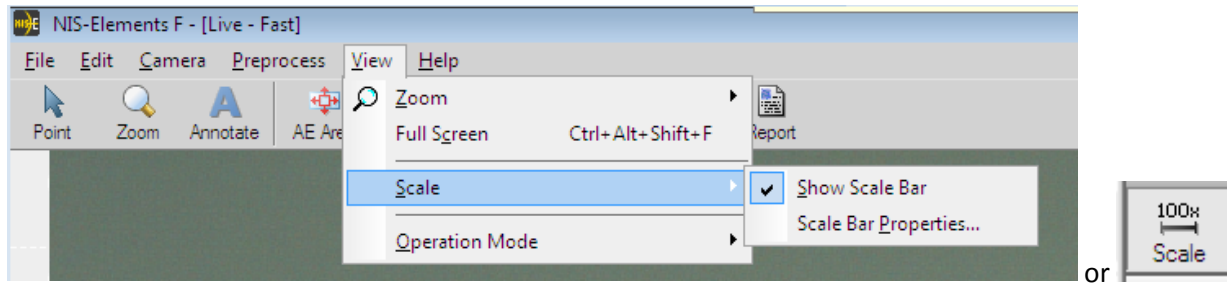


Fig 2: usb box: digital sight **DS-U2**, Camera box with lense: digital sight **DS-2Mv** ; serial number 201115

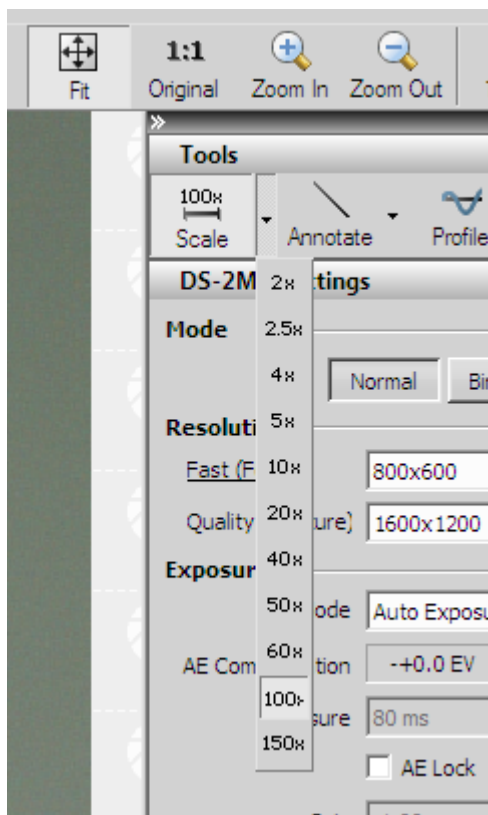
When the Software “NIS-Elements-F 3.22.00” has finished its startup, then make sure that you are in “live mode”, i.e. title line, otherwise hit the plus sign (“+”).



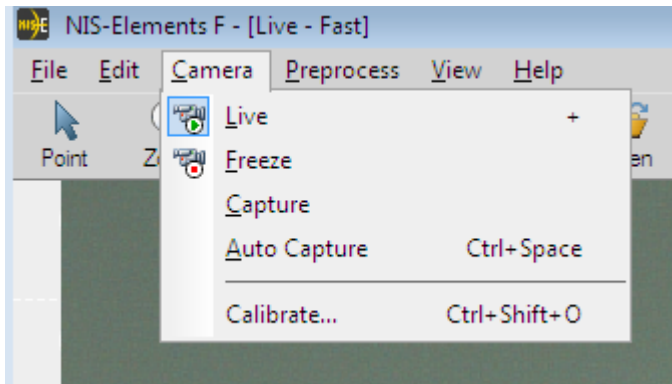
Make sure the scale bar shows, either by following the menu tree “NIS->View->Scale->ShowScaleBar or by hitting in the sidebar menu “Tools” the “scale bar button”:



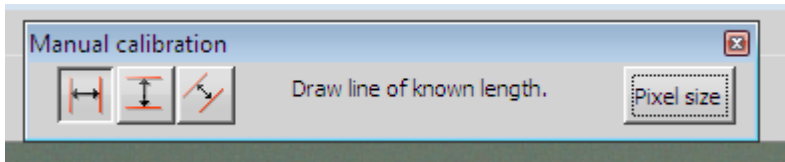
Select the 100x magnification by selecting from the downwards facing triangle button:



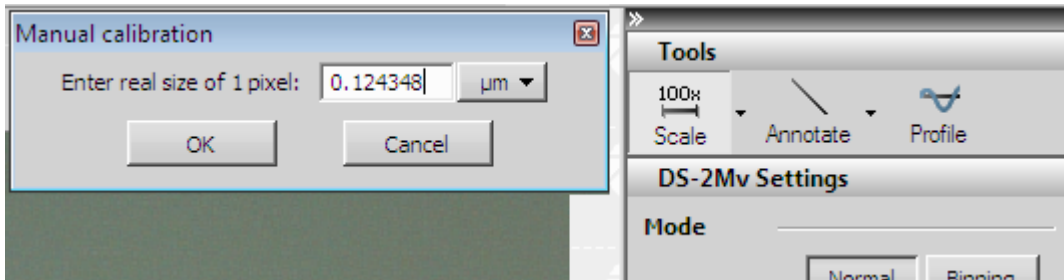
Go to NIS->Camera->Calibrate (ctrl-shift-O) to start calibration:



In the manual calibration popup, choose the "Pixel size" button:



Then enter the **value of 0.124348** for the case of **100x** as follows. Did I mention to hit "OK" ?



This will also set the distances for the scalebars of 5x, 10x, 20x, 50x by simple multiplication.

Taking above 0.124348 value as a reference is fast but - if not wrong - at least dirty, it does not truly calibrate the 100x value, it just refers to a past calibration, to past glory.

Meaningful calibration is done by observing the Cr plate that is behind the microscope, which has a calibration design on it. Search for a checkerboard design made of 10µm x 10µm squares, in the manual calibration popup you do not use "pixel size" but the "|<--->|" button, measure a period, i.e. not the width of a square, but the distance from a left side of a square to the left side of a square 10 squares away.

Even if you do not have infinite amounts of time on your hands, this is the correct way of calibrating.

Enjoy.