

# Instruction for using the AmScope camera with various microscopes

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## AmScope MU300 camera

1. turn on the computer
  - if power indicator lights of monitor, computer, and surge protector are off; push the grey button on the surge protector to turn on the monitor and computer
  - if power indicator light of monitor is amber, computer is off, and surge protector is green; push computer power button to turn on the computer
  - if power indicator lights of monitor and computer are off, but surge protector is green; push the power buttons on the monitor and computer to turn both on
2. log in to Windows
3. double click on AmScope(x64) on the desktop to launch the camera software
4. do Options > Magnification...

*Note:* The current Magnification setup is for either the Nikon Eclipse compound microscope or the Wild M8 dissecting microscope as shown in the tables below, if it is not set to the scope of your choice, you can import the calibration data, e.g., AmScope\_nikon\_eclipse20160523.magn or AmScope\_wild\_m820160526.magn in C:\Users\Public\Documents\AmScope settings. It's OK to clear all the current items in this process.

Nikon Eclipse E600FN

Name	Resolution		Field of view ( $\mu\text{m}$ )	
	pixel/m	$\mu\text{m}/\text{pixel}$	width	height
4×	691372	1.45	2962	2222
10×	1720074	0.58	1191	893
20×	3427727	0.29	597	448
40× Oil	7057374	0.14	290	218
60× Oil	10400193	0.10	199	149

Wild M8

Name	Resolution		Field of view (mm)	
	pixel/m	$\mu\text{m}/\text{pixel}$	width	height
6×	105670	9.46	19.38	14.54
9×	148176	6.75	13.82	10.37
12×	199668	0.50	10.26	7.69
18×	303636	3.29	6.74	5.06
25×	420909	2.38	4.87	3.65
40×	677277	1.48	3.02	2.27
50×	841823	1.19	2.43	1.82

5. Toolbar: select unit and magnification/objective
6. Camera List: MU300 should appear here, click on it to launch live view
7. Capture & Resolution: should use 2048×1536 for both Live and Snap
8. locate and focus the object of interest
9. Exposure & Gain: metering is done with the green bounding box and Gain should be kept at 1
  - Auto Exposure—slide Exposure Target to e.g., 100, for the desirable intensity
  - manual exposure—slide Exposure Time to get the desirable intensity
10. White Balance: position the red bounding box on an empty area in the field of view, move the slide if necessary; click on White Balance to set the optimal color temperature e.g., about 4800K-5000K
11. Capture & Resolution: click Snap to grab an image
12. with the image tab selected, click save (Toolbar) to save the image
  - some common file formats of the RGB image with 3 8-bit planes
    - TIFF: uncompressed/LZW compressed, supports spatial calibration (readable by ImageJ)
    - PNG: lossless compression
    - JPEG: lossy compression
  - to set the spatial calibration if it is not done during acquisition or needs modification, do Image > Resolution..., then provide the calibration e.g., in pixel/m as shown in the above tables

## Nikon Eclipse E600FN

### Trans illumination

1. on the Transmitted Light power supply (left of the microscope) set the dial to a reasonable brightness e.g., between 4 and 5 with the Optical Path Selection lever on the microscope set to BINO & PHOTO
2. turn on the power with the On/Off switch
3. set up for brightfield
  - analyser
    - if the analyser is installed, make sure it is out: push it all the way in then pull it out slowly until it clicks and you should not see the red line
    - if the plastic empty filter holder is installed, it should be pushed all the way in
  - Cube Selector lever is at position 2: INT
  - condenser position: A
  - set up Kohler illumination
    - i. switch in a low power objective: 4× with WD 30mm or 10× with WD 4 mm
    - ii. locate an area of interest and focus
    - iii. switch in the desirable objective and focus
    - iv. close down the field diaphragm (at the base)
    - v. bring the edge of the field diaphragm to focus with the condenser focus knob
    - vi. center the condenser, if necessary
    - vii. open the field diaphragm to just beyond the field of view
    - viii. close down the aperture diaphragm (on the condenser turret) and then slowly open it until the intensity just max out

# Check out

1. If you use the Nikon Eclipse
  - i. raise the objective, remove your prep; if applicable, remove oil/immersion fluid on immersion objectives
  - ii. switch to the 4× objective
  - iii. turn off Transmitted Light, if used
2. save your images and quit AmScope
3. copy your data to external storage media or cloud, as needed
4. submit your usage using the google form
5. computer
  - o if there are users sign up within the next 6 hours, log out of Windows
  - o if no one signs up within the next 6 hours
    - i. shutdown Windows
    - ii. turn off the surge protector
    - iii. put the cover back on the microscope
6. clean up the work area