

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 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_eclipse20200317.magn or AmScope_wild_m820200317.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 (μm)	
	pixel/m	$\mu\text{m}/\text{pixel}$	width	height
4×	690771	1.4477	2964.80	2223.60
10×	1722210	0.5806	1189.17	891.88
20×	3427109	0.2918	597.59	448.19
40× Oil	7058131	0.1417	290.16	217.62
60× Oil	10305407	0.0970	198.73	149.05
20× water	3818712	0.2619	536.31	402.23
40× water	6857146	0.1458	298.67	224.00
60× water	10205278	0.0980	200.68	150.51

Wild M8

Name	Resolution		Field of view (mm)	
	pixel/m	$\mu\text{m}/\text{pixel}$	width	height
6×	105375	9.4899	19.435	14.577
9×	148176	6.7487	13.821	10.366
12×	200001	5.0000	10.240	7.680
18×	303031	3.3000	6.758	5.069
25×	420233	2.3796	4.873	3.655
40×	675119	1.4812	3.034	2.275
50×	838948	1.1920	2.441	1.831

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. Flat Field Correction: move the slide to an empty area, click capture and check "Enable" to activate
 - you may have to disable Flat Field Correction when you need to set a new White Balance e.g., change objectives
12. Capture & Resolution: click Snap to grab an image
13. 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, metadata included but the spatial calibration is no longer readable by ImageJ with BioFormat plugin
 - PNG: lossless compression, no metadata support
 - JPEG: lossy compression, no metadata support
 - 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
 - you can close down the aperture diaphragm to increase contrast but give up some resolution

Wild M8

There are illuminators for both incident and transmitted light.

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
 - if there are users sign up within the next 6 hours, log out of Windows
 - if no one signs up within the next 6 hours
 - i. shutdown Windows and turn off the surge protector
 - ii. put the cover back on the microscope
6. clean up the work area