

Manual Nanometrics Automated Film Thickness Measurement System.

1. Turn on the computer, the monitor (front-low-right), and the hardware box (toggle switch on the rear). The computer should start up and the lamp of the microscope should light up.
2. Use the colored keys to answer the following questions:
 - a. Enable Datalink? NO
 - b. Is Wavelength 480? Check the wavelength indicator on the head of the microscope and choose YES if it is indicating 480.
 - c. Refractive Index Option? NO
 - d. Enable Printer? NO
3. For most accurate results wait for 15 minutes for the system to warm up.
4. The black dot seen through the objective is the measurement point. The microscope has several objectives. The larger the magnification the smaller the measurement area. The table below lists the relation between objective and measurement area:

| Objective Color | Lens Power | Dot Size/Measurement Area |
|-----------------|------------|---------------------------|
| Red | 5X | 50 micron |
| Yellow | 10X | 25 micron |
| Blue | 50X | 5 micron |

5. Push the test key. The Available Programs Menu will be displayed with 14 different programs. Depending on your sample select the appropriate measurement program. For oxide films on a silicon wafer select measurement program 1.
6. The computer will ask for the objective lens you will use, i.e. "Enter objective lens ____ (0=5x, 1=10x, 2=50x)". For a large sample always use the blue objective.
7. The computer will ask for the reference sample. Place the bare silicon reference sample under the objective and focus.
8. Press <Measure>.
9. The computer will ask for the sample ID. Provide the sample name and press <enter>.
10. Place the sample under the objective.
11. Focus on the sample and press <Measure>.
12. The Automated Film Thickness Measurement System will perform a measurement and provide you with the thickness of the oxide layer on top of the silicon.