Minimum required specification for an optical microscope:

1. The optical microscope shall be an upright microscope.
2. The optical microscope shall have lighting underneath and overhead.
3. The optical microscope shall have an eye piece to enable sample viewing without the need to use a computer system.
4. The optical microscope shall have a 2 step focus drive with coarse and fine focusing and a total stroke of at least 30 mm.
5. The focus drive shall be ergonomic and height adjustable to fit the user's hand size.
6. The optical microscope shall have a revolving 6 position nosepiece.
7. The optical microscope shall have LED lighting with a constant color temperature of 4500 K and be capable of brightfield and darkfield measurements, polarization filtering, and a filter turret with 4 filter cubes.
8. The optical microscope shall have a lamp housing that contains a 100 W halogen lamp.
9. The optical microscope shall have long working distance objectives with magnification levels ranging from 5X to 100X.
10. The optical microscope shall have a built in oblique contrast to enable facile assessment of sample topography.
11. The optical microscope shall have an integrated focus stop.
12. The optical microscope shall have a camera interface to collect images for processing.
    a. The camera shall be capable of collecting high resolution images sufficient for analysis of sub-micrometer features.
13. The optical microscope shall interface directly with a computer that accompanies the microscope.
    a. The computer shall enable data transfer using a USB port.
    b. The computer shall come with a monitor.
    c. The computer shall be capable of storing a significant number of images (greater than 1000 images).
14. The optical microscope shall come with interface and data collection software.
    a. The interface and data collection software shall:
        i. Be capable of measuring distances and areas defined by the user along any axis or of a myriad of different shapes.
        ii. Be capable of making measurements on live images or saved images.
        iii. Be capable of readily exporting images, raw or processed, as .tiff, .jpg, etc. data files.
        iv. Be capable of a myriad of image processing techniques (brightness and contrast adjustment) to enable the best resolution images to be recorded.
15. The optical microscope shall be operable using both the instrument itself or through the computer interface software.

16. The optical microscope shall have an X-Y translation stage that can be manually operated or operated using the computer interface software with a travel distance of 8 inches (20.3 cm).
17. The stage shall contain a removable glass insert.
18. The stage shall have joystick control with at least 3 freely programmable positions.
19. The vendor shall install the optical microscope and provide on-site training for the operation of the instrument.