

FLUORESCENT MICROSCOPE OPERATION

A. Microscope Environmental Requirements

1. For proper operation the microscope should be placed in a suitable area having the following requirements:
 - a. Ability to darken the room completely to maximize fluorescent light.
 - b. A level counter space that will provide a comfortable working position for personnel reading specimen slides. A suitable chair should also be used so that reading can be performed appropriately and not strain the person reading the slides.
 - c. The counter space must have adequate space so that all edges of the microscope , the lamp housing and the light source box are 10 cm away from a wall or any other equipment.

B. Microscope Light Requirements

1. The light source for the fluorescent light must be switched on and allowed to warm-up for 5 minutes prior to use.
2. Once the fluorescent light has been turned on, it cannot be turned off in less than 15 minutes.
3. Make sure to close the shutter slider to shut-off the fluorescent light temporarily during interruption while reading slides
 - a. To prevent fading of specimens fluorescent intensity
 - b. To prolong the life of the burner and the bulbs by avoiding frequent on/off

C. Changing the Fluorescent Light Bulb

1. Fluorescent bulb can be changed only after the light source has been turned off for 30 minutes and the lamp housing is only warm to the touch.
2. It is recommended by the manufacturer that the fluorescent bulb be changed after 100 hours of use. This can be observed in the timer located in the fluorescent light power box. The timer should be re-set each time the fluorescent bulb is changed.
3. When changing the 50W mercury fluorescent bulb it is recommended not to handle the glass bulb portion but rather to handle the metallic base and top of the bulb
 - a. If the bulb portion is handled, make sure to wipe it off gently using a tissues moistened with alcohol.
 - b. Smudges and dirt on the glass bulb will interfere with the light path and will affect the quality of the fluorescence.
4. The fluorescent bulb should be changed by utilizing the following steps:
 - a. Read and understand the safety section below before performing the following steps.
 - b. Turn off the microscope and the fluorescent light power supply. Also, unplug both units from the wall outlet.
 - c. Let the lamp housing cool for 30 minutes.
 - d. Do not unscrew the lamp housing from the microscopes main body. Instead, open the lamp housing door, following the manufacturers instructions (see manual).
 - e. Remove the lamp positioning stand and using the supplied devices, loosen the screws holding the lamp in place.

- f. Take great care in handling the bulb as it can cause severe bodily damage if it breaks and explodes. Also, do not handle the glass portions of the bulb, only handle the metallic areas at the top and the base of the bulb.
- g. Remove the old bulb and replace with the new bulb. Tighten all screws as described in the manual.
- h. Place the old bulb in a sturdy plastic container that can be completely tightened with a screw-cap cover. Discard the container with the old bulb in an appropriate sharps disposal container.
- i. Replace the lamp stand into the proper position in the lamp housing and tighten all holding and locking screws.
- j. After all parts are in place and tightened, plug in all the microscope units and switch on the fluorescent light power supply box.
- k. Let the microscope warm-up for 5 minutes and adjust the light source, following the manufacturer's instructions.

D. Fluorescent Microscopy Safety

1. Make sure that the microscope is plugged into the appropriate electrical outlet with correct plugs and adaptors.
2. Make sure that prior to performing all bulb changing procedures, all microscope components are switched off and unplugged from electrical outlets.
3. Never open the lamp housing while the fluorescent light supply source is switched on. The lamp housing must only be opened after the fluorescent light source has been switched off for 30 minutes. Severe damage to the eyes will result from looking at the fluorescent light source.
4. When adjusting the fluorescent light source after replacing a new bulb, again, do not look at the light image for any extended time as this could also cause damage to the eyes.
5. Handle the mercury fluorescent bulbs with great care. The bulbs contain a high level of pressure and when broken can explode and cause serious damage eyes and other bodily parts.
6. When disposing used bulbs, place them first in a sturdy, outer container with a screw-cap that can be securely fastened. Then dispose them in an appropriate glassware disposal container.
7. Do not touch the lamp housing when the fluorescent light source is switched on. The unit is very hot and can cause burns. Additionally, make sure the lamp housing is placed so that it does not touch walls, curtain, or other equipment as it can cause fires.

E. Microscope Maintenance

1. Keep microscope clean and dust free.
2. Wipe objectives, condenser and stage with a tissue to clean. If necessary moisten with water but avoid use of any other solvents.
3. Use dust cover to protect microscope, but only after the burner has cooled down.
4. Change mercury vapor bulb when necessary (see instructions above)