Halogen Lamp Life:

Just a quick not regarding Halogen lighting in microscopes. Those microscopes that allow rheostat dimming, the raising and lowering of the lamp intensity, by varying the amount of electricity supplied to the lamp have a built in caveat. The voltage supplied to the lamp effects the lamps life.

In **Fiber Optic** units: let's talk lamps, the 150W EJV and the EKE lamp type is designed to operate for 40 hours or 200 hours at full power, that life can be extended up to 1,400 hrs. or 7,000 hrs. just by lowering the intensity or varying the amount of electricity reaching the bulb. At 80% of power you are getting a life extension of 96 hrs. and 480 hrs. at 50% power you go to 560 hrs. and 2800 hrs. Do you really need to operate at 100%? The same is true for the 15W or 20W Halogen lamp provided in the upper illuminator of our microscopes. Are you burning up your lamp and blowing out your images because you feel you need to have full intensity? Most subjects are better viewed at lower light intensity.

The Halogen Cycle is the operating principle of all Quartz Halogen lamps. At full voltage, the temperature of the glass envelope is hot enough to keep evaporated tungsten (thrown off from the filament) from collecting on the glass surface. The tungsten is cycled back to the filament and thus increases its lifetime. As voltage is reduced, the temperature of the glass envvelope also decreases, which might effect the halogen cycle. For this reason the lamp life might not be increased as expected when the voltage is dimmed below 75%.

All types of quartz Halogen bulbs used in cold light sources (DDL, EKE, EJA, EFR and ELC) operate in the same manner. Metal halide bulbs should not be dimmed below the 75% voltage but look at the increased life you get.

Bulb characteristics at different voltages: The following chart is for a typical fiber optic unit using a 150W Halogen lamp with a 110-120VAC at 60 HZ current (North American)

Light Output	EJV Bulb		EKE Bulb	
Power	Blub Life	Color temp.	Bulb Life	Color temp.
70%	160 hrs	3280 K	800 hrs	3130 K
80%	96 hrs	3310 K	480 hrs	3160 K
90%	56 hrs	3360 K	280 hrs	3210 K
100%	40 hrs	3400K	200 hrs	3250 K

These are just some hopefully helpful pieces of information when dealing with lighting. Most fiber Optic units operate with a 150W Halogen bulb at 110-120 VAC. Most microscope lights are either operating with a 15W or 20W Halogen bulb at either 6V or 12V, make sure you know what voltage lamp you are using so that replacing it is not a problem. Write it on the bottom of your unit for quick reference.