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## TECHNICAL INFORMATION

### Cordless UV Lamp Catalog No. SWL100

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#### INTRODUCTION

The SWL100 serves as a fully portable, battery-operated shortwave UV light source for field and lab use. The light is equipped with one 4-watt germicidal bulb producing shortwave UV light at an approximate frequency of 454nm. Four (4) alkaline batteries power the unit (not included).

#### PROCEDURE

The light source is easily powered ON and OFF with the accessible thumb switch. It's compact size makes the SWL100 the ideal companion for searching crime scenes. **Note:** *The SWL100 is equipped with a filtered shield that ensures high shortwave UV intensity and it also protects the lamp. This shield is not to be removed for use.*

**SPECIAL PRECAUTION:** *Avoid the use of shortwave UV light (254nm) in the presence of visible blood-stains if subsequent DNA analysis is a consideration. Collect blood samples prior to shortwave UV exposure.*



## BATTERY REPLACEMENT

This model uses 4-AA batteries (not included). Access batteries through the closure cap, opposite from the cord end (Fig. 1). Some alkaline batteries vary in length. If the closure cap cannot be easily replaced, unscrew the end cap with a small Phillips screwdriver to insert the batteries, replace closure cap and then reset the end piece. Change the batteries as soon as they become weak to extend tube life. **NOTE:** Remove batteries for prolonged storage of unit.

## LAMP REPLACEMENT

Remove the lamp base by unscrewing the Phillips screw at the cord end. Lift and remove the filter portion of the tube cover (Fig. 2). Twist the tube slightly (needle-nose pliers may be needed) so it can be easily removed. Insert a new tube available from SIRCHIE.

**NOTE:** Keep switch turned OFF (positioned towards the cord) during the above operation to prevent damage to the circuit.

**CAUTION:** Lamps contain mercury, dispose according to Local, State or Federal Laws.

## MAINTENANCE

Other than replacing batteries and the lamp, the only other maintenance recommended is to keep the outer shell clean using a mild detergent solution. **Note:** Should any other problems arise, contact the factory (Customer Service) for return authorization at (919) 554-2534.



FIGURE 1



FIGURE 2

## PRECAUTIONS: ultraviolet Radiation

The three areas of ultraviolet radiation are UV-C at 100 to 280nm, UV-B at 280 to 315nm, and UV-A at 315 to 400nm. UV-C is the shortest wave ultraviolet radiation and UV-A is the longest wave ultraviolet radiation.

The retina of the eye is not very vulnerable in the ultraviolet or the far-infrared portions of the spectrum. It is the cornea and the lens that absorb ultraviolet. High exposure levels can permanently damage these structures of the eye. Intermediate levels in the UV (200-320nm) cause greater injury to the cornea, which is severe but temporary. The injury, photokeratitis, may last for only one or two days but is extremely painful. Near-ultraviolet (long wavelength UV-A) is absorbed heavily in the lens of the eye. Damage to this area of the eye may not be evident for many years and may have lasting effects.

Human skin is also susceptible to radiation injury. This susceptibility occurs in the range of radiant energy present in the ultraviolet spectral region of 400-320nm. This type of radiation can cause severe sunburn. Certain photosensitizing chemicals greatly increase the sensitivity of the skin. Previous exposures to specific wavelength bands that are generally in the long wavelength ultraviolet and visible portion of the spectrum also sensitize the skin. Some orally administered drugs such as tetracyclines and common pain relievers also cause photosensitization.

The factors predisposing individuals to possible harm from ultraviolet radiation are:

- Sensitivity of the individual
- The length of exposure
- Intensity of the ultraviolet light source
- Light source/surface distance

Recommended Personal Protective Equipment:

- UV absorbing face shield or glasses with side shields
- Long sleeved laboratory coat or overalls
- Opaque cotton or garamid fiber gloves

SIRCHIE shortwave UV lamps utilize low-pressure mercury lamps, which emit radiation in the UV-C (254nm) spectrum. Any amount of exposure to these lamps should be considered hazardous and protective equipment for the eyes and exposed skin must be worn. When using any UV lamp, avoid needless exposure to radiation and turn the lamp off when not in use.



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