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TECHNICAL INFORMATION

Puissant 30-Watt Longwave UV Light

Catalog No. UV9600

INTRODUCTION

Ultraviolet (UV) light sources are used at the crime scene and in the laboratory for the preliminary examination and location of physical evidence.

Ultraviolet (UV) light examination of physical evidence traces may yield valuable information toward the solving of many different crimes. Examination of physical evidence under UV light includes just about everything. Some of the more useful items are as follows: physiological fluids, glass and ceramics, petroleum products, fibers, hair, cosmetics, wood and botanical materials, minerals, gems, glues, adhesives, drugs, poisons, plastics, foodstuffs and arson debris.

Ultraviolet (UV) light is essential when utilizing fingerprint enhancement powders and dyes. Silver nitrate, physical developer and DFO development of fingerprints are enhanced with UV light. The use of fluorescent tracer powders, pastes and inks in conjunction with UV light enhance theft detection and security. Imagination is the only limiting factor.

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FIGURE 1—Technician uses the UV9600 to illuminate dusted latent fingerprints.

The UV9600 lamp provides high intensity longwave (365nm) illumination for illuminating treated latent fingerprints. Two 15-watt lamps provide a full 30 watts of longwave UV light. The A sturdy base provides self-support for hands-free operation. This light is ideal for searching large areas. The unit features dual voltage capability for either 110V or 220V AC operation. The Puissant lamp may be transported or stored in an optional durable molded carrying case (No. UV9602).

PROCEDURE

The Puissant Light operates from a standard AC power source. A sensor built into the lamp circuitry detects whether the power source is 110V AC or 220V AC, and automatically switches to the proper power configuration (220V AC cord adapter is not included).

A single, rocker-type ON/OFF switch controls the bulbs. Plug the power cord into the nearest power outlet, direct the lamp toward the area to be searched, and switch it ON.

The lamp may be carried around the area being searched using the carrying handle, or it may be placed on a flat, level surface (Fig. 1).

TROUBLESHOOTING

Lamp Does Not Illuminate or Illumination Is Intermittent

1. Check for worn, frayed or loose power cord. Be certain the power outlet is working.
2. Check for a loose or blown line fuse.
3. Check for loose or broken bulbs, especially if the unit has been dropped or has received a sever shock (see MAINTENANCE for instructions on bulb access and replacement).

MAINTENANCE

Fuse and bulb replacement is the ONLY maintenance to be done by the end-user.

Bulb Replacement:

1. Disconnect the lamp from the AC power source.
2. Place the unit on a flat surface with the power switch facing down. Remove the four (4) retaining screws on both sides of the unit that secure the face plate to the lamp housing (Fig. 2) and set it aside.

FIGURE 2

FIGURE 3

3. The bulbs are fitted with standard fluorescent-type terminals on each end. Grasp a bulb, twist in either direction, and lift it up to remove it from the end connectors (Fig. 3).
5. Place the new bulb into the end connectors and twist in either direction until the bulb snaps into place.
6. Replace the face plate cover and secure it with the four screws, but do not over tighten. The unit is now ready for use.

Fuse Replacement

1. Disconnect from power source. To remove the line fuse, grasp the fuse holder, push in and twist counter-clockwise. Pull the fuse out of the lamp housing.
2. Replace the fuse with a 3AG 1 Amp, 250V fast-blo type. Reinsert the fuse into the housing, push in and twist until it locks.

If replacing the lamps and/or the line fuse fails to solve the problem, please contact the factory for return authorization. Call Customer Service at (919) 554-2534.

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 200-320nm. 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's 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.