



TECHNICAL INFORMATION

AC/DC Tiger Twin UV Light Source

Catalog Nos. 752UV, 752UV220, 762UV, 762ADC, 762ADC220, 764UV, 764UV220, 784UV, 784ADC, 784ADC220, 786UV, 786UV220

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.

These UV light sources are the ideal for physiological fluids detection, questioned document examination, thief detection and trace metal detection. They have simple push button operation and are constructed of high quality vinyl clad aluminum. The highly reflective, nickel plated light reflector offers more effective concentration of the light energy.

Nos. 762ADC*, 762UV, 784ADC*, and 784UV come with the added feature of a high-output switch located on the rear panel for additional illumination. These compact, battery-powered units are ideal for field and lab use. Batteries are not

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included. (*Note: Nos. 762ADC and 784ADC come with an AC/DC connector. 220V AC versions are available with Nos. 762ADC220 and 784ADC220.)

Nos. 752UV, 764UV, and 786UV are designed primarily for laboratory use since they are strictly 110/120V AC. They offer the same capabilities for a variety of evidence examination assignments. (Note: 220V AC versions are available with Nos. 752UV220, 764UV220, and 786UV220.)

PROCEDURE

Nos. 762ADC, 762ADC220, 762UV, 784ADC, 784ADC220, and 784UV

Operation of these UV light sources is extremely simple. To turn the unit ON, press the appropriate POWER push-button.

Pressing the button a second time turns the unit off. To activate the high-output switch for additional illumination, depress the HI-OUT button on the rear panel. A high-pitch “squeal” is often emitted while the HI-OUT button is pressed, this is normal. The double light power of Nos. 784ADC and 784UV reduces eyestrain when searching for minute amounts of evidence and doubles the output of fluorescent enhancement. All units, shown to the right, are battery operated, but Nos. 762ADC and 784ADC also come with an AC adapter for convenience. Nos. 762ADC and 762UV require 4 “AA” alkaline batteries, while Nos. 784ADC and 784UV require 4 “C” alkaline batteries (not included).



Nos. 752UV, 752UV220, 764UV, 764UV220, 786UV, and 786UV220

Operation of these UV light sources is also easy. To turn the units ON, press the appropriate POWER push-button located on the back panel. Pressing the button a second time turns the unit off. The double light power of Nos. 752UV and 786UV reduces eyestrain when searching for minute amounts of evidence and increases the fluorescence of the material being viewed. Nos. 752UV, 764UV, and 786UV have 120V AC detachable power source. Nos. 752UV220, 764UV220, and 786UV220 come with the appropriate 220V AC detachable power source.

BATTERY REPLACEMENT

Nos. 762ADC, 762ADC220, 762UV, 784ADC, 784ADC220, and 784UV

1. Remove the two (2) screws holding the end cover labeled “Battery Access” with a small Phillips head screwdriver.

- Carefully pull out the battery holder until it just clears the end of the case.
- Install four alkaline batteries (not included) in the holder. Pictorials printed on the battery holder indicate direction with + and – symbols. (Nos. 762ADC and 762UV require 4 “AA” alkaline batteries, and Nos. 784ADC and 784UV require 4 “C” alkaline batteries.)
- Carefully reinstall battery holder, end cap and screws.

LAMP REPLACEMENT

Nos. 752UV, 752UV220, 762ADC, 762ADC220, 762UV, 764UV, 764UV220, 784ADC, 784ADC220, 784UV, 786UV, and 786UV220

Note: Remove batteries and/or make sure unit is not plugged in before replacing lamps. Though lamp replacement is rarely necessary, follow these guidelines:

- Firmly grasp the lamp near each end with the fingers of both hands and twist 1/4 turn.
- Carefully lift lamp out.
- Replace with similar type F4T5 4-watt, 365nm bulb (No. 6762).

MAINTENANCE

Other than replacing batteries and lamps, there are no serviceable parts. INTERNAL SHOCK HAZARD!!! Refer servicing to qualified personnel.



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.

SPECIFICATIONS:

752UV, 752UV220
CASE DIMENSIONS:
 11.4375" x 3.325" x 4.5"
CONSTRUCTION: 20 gauge (.036" thick) steel, spot-welded housing; painted finish, black w/texture
WEIGHT: 4.5 lbs.
POWER SOURCE: 110V or 220V AC 7' power cord
BULBS: (2) Longwave, UV-A black light type (No. F4T5), 4-watt, 365nm peak wavelength
HANDLE: Cast aluminum handle w/finger grooves; painted finish, black w/texture
POWER SWITCH: Push-button

762UV
CASE DIMENSIONS:
 6.875" x 1.6875" x 1.875"
CONSTRUCTION: Vinyl-clad aluminum/nickeloid steel
WEIGHT: 11.8 oz. w/batteries
POWER SOURCE: 4 "AA" alkaline batteries, 1.5 volts
BULB: Longwave, UV-A black light type (No. F4T5), 4-watt, 365nm peak wavelength
HIGH-OUTPUT SWITCH: Push-button, momentary
POWER SWITCH: Push-button

762ADC, 762ADC220
CASE DIMENSIONS:
 6.875" x 1.6875" x 1.875"
CONSTRUCTION: Vinyl-clad aluminum/nickeloid steel
WEIGHT: 13.5 oz. w/batteries

POWER SOURCE: 4 "AA" alkaline batteries, 1.5 volts; 110V or 220V AC adapter
BULB: Longwave, UV-A black light type (No. F4T5), 4-watt, 365nm peak wavelength
HIGH-OUTPUT SWITCH: Push-button, momentary
POWER SWITCH: Push-button

764UV, 764UV220
CASE DIMENSIONS:
 6.8125" x 1.6875" x 3.4375"
CONSTRUCTION: Vinyl-clad aluminum/nickeloid steel
WEIGHT: 17 lbs.
POWER SOURCE: 110V or 220V AC power cord
BULB: Longwave, UV-A black light type (No. F4T5), 4-watt, 365nm peak wavelength
POWER SWITCH: Push-button

784UV
CASE DIMENSIONS:
 6.75" x 3.25" x 2.625"
CONSTRUCTION: Vinyl-clad aluminum/nickeloid steel
Weight: 1 lb. 10 oz. w/batteries
POWER SOURCE: 4 "C" alkaline batteries, 1.5 volts
BULBS: (2) Longwave, UV-A black light type (No. F4T5), 4-watt, 365nm peak wavelength
HIGH-OUTPUT SWITCH: Push-button, momentary
POWER SWITCH: Push-button

784ADC, 784ADC220
CASE DIMENSIONS:
 6.75" x 3.25" x 2.625"
CONSTRUCTION: Vinyl-clad aluminum/nickeloid steel
WEIGHT: 1 lb. 10 oz. w/batteries
POWER SOURCE: 4 "C" alkaline batteries, 1.5 volts; 110V or 220V AC adapter
BULBS: (2) Longwave, UV-A black light type (No. F4T5), 4-watt, 365nm peak wavelength
HIGH-OUTPUT SWITCH: Push-button, momentary
POWER SWITCH: Push-button

786UV, 786UV220
CASE DIMENSIONS:
 6.75" x 3.25" x 2.625"
CONSTRUCTION: Vinyl-clad aluminum/nickeloid steel
WEIGHT: 2 lbs. 1 oz. (unit only)
POWER SOURCE: 110V or 220V AC 6' power cord
BULBS: (2) Longwave, UV-A black light type (No. F4T5), 4-watt, 365nm peak wavelength
POWER SWITCH: Push-button