
TECHNICAL INFORMATION

The TIGERUV™ Catalog Nos. 790UV, 790UV220

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 lights provide illumination at wavelengths that make it possible to visualize many forms of physical evidence that in many cases were undetected by traditional collection methods.

The TIGERUV™'s wide beam of 365nm UV light is useful to scan large areas for evidence at the crime scene. Evidence such as fibers, bone fragments, physiological fluids, and others can fluoresce in the presence of UV light, uncovering what was hidden without it.

PROCEDURE

The TIGERUV™ utilizes an internally ballasted mercury arc lamp enclosed in an outer glass envelope designed to pass UVA radiation while blocking dangerous UVC (shortwave) radiation. The unit is turned ON



and OFF through the power switch located on the rear of the unit. A 220V version is available by ordering No. 790UV220. **NOTE:** Like all internally ballasted arc lamps, the 790UV requires several minutes to cool before it will restart after being turned off. If the unit fails to restart after 15 minutes, verify that the bulb is tight and in its socket.

Power Up The Unit:

1. Verify the ON/OFF switch on the rear panel is in the off position.
2. Plug the unit into an appropriate extension cord.
3. Turn the power switch ON. The indicator lamp will light and the arc lamp should immediately come on. **NOTE:** If the arc lamp does not come on, the unit may be too warm; if the switch is left in the ON position, the lamp will light automatically within 15 minutes. Otherwise, replace the arc lamp in accordance to the instructions to follow on Bulb Replacement.
4. Wear UV blocking viewing goggles (No. 798GV) or spectacles (No. 797GV) which may enhance contrast as well as provide safety.



BULB REPLACEMENT

The 790UV utilizes a special internal ballasted mercury lamp not generally available—keep a spare bulb available because it cannot be substituted with an off-the-shelf bulb (order No. 790UVB 150-watt Replacement Bulb).

1. Unplug the lamp.
2. Turn the power switch OFF and allow unit to cool for 15 minutes.
3. Stand the lamp on its bottom and remove the bezel by unscrewing it like removing the head of a flashlight.
4. Remove the bulb and filter by unscrewing it like any ordinary household light bulb. *Note: Lamp contains mercury, dispose according to local regulations.*

5. Screw the replacement bulb with attached filter into the socket without exerting undue pressure.
6. Replace the bezel.
7. The unit is now ready for operation.

PRECAUTIONS: ULTRAVIOLET RADIATION

The three areas of ultraviolet radiation are UVC at 100 to 280nm, UVB at 280 to 315nm, and UVA at 315 to 400nm. UVC is the shortest wave ultraviolet radiation and UVA 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 UVA) 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



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790UV SPECIFICATIONS:

- Longwave Filter Cover, Lamp Housing and End Cap Construction: Nylon (proven thermal and mechanical properties)
- Power Source: 115V AC grounded
- Lamp: Mercury vapor with internal ballast
- Lamp Rating: 150 watts
- Lamp Life: \approx 5,000 hours
- Filter: 365nm UV bandpass filter
Dimensions: 5" dia. x 0.200" thick (12.7cm x 5mm)
- Output: 4,000 μ w/cm² at 15"
- Dimensions: 10.25"L x 6.0625" dia. (26cm x 15.4cm)
- Weight: 3.87 lbs. (1.7kg)
- Outer Case: Aluminum with gloss-black epoxy paint
- Indicator Light: Neon type; diffused
- Power Switch: Heavy-duty rocker switch
- Power Cord: 10 ft. (3m)
- 790UVC Optional Carrying Case: Injection-molded copolymer polypropylene; Dimensions: 21"W x 9"H x 16.5"D (53.3cm x 22.8cm x 41.9cm); Weight (w/unit): 9 lbs. (4.1kg)