

Filter Replacement

Replacement filters for UVG-47 and UVGL-48 come housed in new frames. To replace the filter, remove the filter assembly as described on Page 3 and replace with the new assembly.

Tube and Bulb Replacement

WARNING: Always remove the batteries from the housing before replacing the ultraviolet tube. If the switch is accidentally turned on while the tube is removed and the batteries are still connected, system damage can result.

To change the ultraviolet tube or flashlight bulb, remove the filter assembly as described on Page 3. Remove the tube or light bulb by twisting it loose between your thumb and forefinger. Insert the new tube or bulb in the same manner. Place the filter assembly back in position as described on Page 3.

Replacement Parts & Accessories

Model	Tube Part No.	Filter/Frame Part No.
UVG-47 Lamp	34-0013-01	98-0009-04
UVGL-48 Lamp	34-0015-01	98-0010-04
ML-49 Lamp	34-0016-01	

Part Description	Part No.
J-144 Standard 6V Battery	45-0005-01 (Qty. 1) (Two Required)
J-145 Rechargeable 6V Battery	45-0005-02 (Qty. 1) (Two Required)
J-145R Battery Charger	58-0136-01
UV Goggles	98-0002-02
UV Spectacles	98-0002-01
UV Faceshield	98-0002-04
UV Intensity meters	Contact Analytik Jena

Technical Support & Warranty

Contact AJ's offices with any questions regarding the use of these products. A **Returned Goods Authorization (RGA)** number must be obtained from AJ prior to returning any product to AJ.

The AJ Lamps are guaranteed to be free of defects in materials, workmanship, and manufacture for one (1) year from date of purchase. Consumable parts, including but not limited to tubes, are guaranteed for ninety (90) days from date of purchase.

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Mineralight® and Blak-Ray® Portable Ultraviolet Lamps

Instruction Guide



NOTICE

Do not look into a lighted shortwave or multi-band Mineralight lamp as it can quickly burn your eyes and skin. Always hold Mineralight lamps so that the light beams are away from the user.

The Blak-Ray lamp's longwave ultraviolet is generally considered harmless to the average person. Individuals that are photosensitive or are subject to long term exposures may experience adverse reactions if adequate protection is not used.

Eye and face protection is essential for anyone working with ultraviolet sources, as these can cause burning. See Page 4 for protective equipment ordering information.

This lamp is designed for easy, fatigue-free use. It is important that, for maximum comfort and effortless carrying, the lamp is held with the arm hanging straight down the side of the body. This eliminates arm strain caused by incorrectly holding the lamp with the arm either in a bent position or out in front of the body.

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Ultraviolet Light

Ultraviolet energy cannot be detected by the human eye. Only a blue-hued light will be visible through the filter of the lamp. This is due to the emission of visible light from the lamp grid. The integrated filter eliminates most of this visible light interference and also reduces solarization for prolonged filter life.

Ultraviolet energy is shorter in wavelength than visible violet light, and can be divided into two groups:

Longwave:

The ultraviolet energy nearest to the visible light range (commonly called black light) activates fluorescence in numerous natural substances and manufactured materials.

Shortwave:

The ultraviolet energy farthest from visible light, shorter than rays in sunlight, is primarily noted for its ability to fluoresce minerals for chemical analysis. It is also noted for its germicidal effects.

Using the Ultraviolet Lamp

Certain minerals, such as Monazite and Bastnasite of the Cerium group, have no fluorescent response but will show a dull emerald green color under the unfiltered shortwave ultraviolet. These ultraviolet lamps are designed for use in as dark an area as possible for greatest fluorescence on the material and the varying degrees of brightness of different colors. All lamps have a built-in flashlight. Models UVG-47 and UVGL-48 detect rare earths with the filter assembly removed.

Lamp Operation

Models UVGL-48 multi-band, UVG-47 shortwave and ML-49 longwave are ultraviolet lamps designed for operation using:

- a) Two J-144 standard 6-volt lantern batteries (not included) in series, or
- b) Two J-145 rechargeable 6-volt lantern batteries (not included).

Standard batteries have 20+ hours of life under normal usage. Rechargeable batteries (5 amp hours) will support approximately eight hours of continuous use, while 4 amp hour batteries support about 6.5 hours of continuous use. Rechargeable batteries are good for approximately 500 charges.

NOTE: With use of rechargeable batteries, the optional battery charger is required. DO NOT attempt to charge standard (non-rechargeable) batteries as this will result in permanent battery and/or lamp damage.

Battery Replacement

To install batteries, remove the battery cover plate. Place the lamp face down on a clean, smooth surface. Place the first battery, coil side pointing inward, into the battery cavity with the positive (+) coil on the bottom right. Place the second battery on top of the first in the same position. Re-attach cover plate to the lamp.

Charging the Rechargeable Batteries

With the rechargeable batteries inserted into the lamp, plug the charger cord into the port on the back of the lamp. Plug the charger unit into a wall outlet (for indoor use only). **NOTE:** It is very important to charge the batteries for at least 16 hours for the initial charge, since the initial charge will determine how much of a charge the battery will hold thereafter. If the initial charge is less than 16 hours, the battery will not hold its maximum charge and will need recharging more frequently.

Lamp Handle

Adjust the lamp to the desired beaming angle (up, down or straight ahead) by simply moving your hand forward or backward on the curved carrying handle. Carry the lamp with the arm hanging straight down for maximum comfort.

Lamp Selector Switch

The lamp uses a 3-position switch. In the center position, the lamp is OFF. To operate the ultraviolet light, push switch to the left. To operate the flashlight, push switch to the right. Be sure to turn switch off when not in use.

Using the UVGL-48 Wavelength Selector

This is a multi-band ultraviolet lamp, half longwave and half shortwave. The wavelength selector slides up and down to allow wavelength selection. The upper half of the lamp (flashlight end) is shortwave, the lower half is longwave. The wavelength selector snaps on or off easily. When not in use, store the selector in the battery compartment between the battery and lamp housing wall.

Filter Assembly Replacement

TO REMOVE: Hold the lamp handle in one hand directly over the switch. With the other hand, grab the top half of the filter frame. With a rolling motion, pull the filter frame away from lamp body until it breaks free from its position. Then lift off.

TO REPLACE: Align the two locking nipples located inside the top end of the lamp housing with the filter assembly, then apply pressure on the bottom part of filter frame until it snaps into a locked position. Shortwave filters on UVG-47 and UVGL-48 have a rated average life of 1000 hours. The ML-49 has no separate filter; its BLB tube contains the filter.