
TECHNICAL INFORMATION

Super BLUEMAXX™ 3 Kit Catalog Nos. BMK990, BMK990220

BLUEMAXX™ SYSTEMS

BLUEMAXX™ illumination systems are useful for performing fluorescent examinations on materials of forensic interest with excitation bands of 390-520 nanometers (nm), including physiological fluids such as urine, semen and saliva, and materials treated with certain powders and dyes. These devices are especially useful in the search for evidence at crime scenes.

The Super BLUEMAXX™ 3 features a rechargeable 12V DC lead-acid battery capable of six (6) hours of continuous use. The BM990 is equipped with AC and DC accessory-type plugs that connect directly to the back of the unit for recharging in the office or out in the field. The trigger on the lamp housing activates the SUPER BLUEMAXX™ 3 light. The 3-watt LED (Light Emitting Diode) operates at 455nm and produces a high-intensity beam of blue light that covers larger areas and distances than lower powered alternate light sources. Your kit includes an orange barrier filter, a 35mm camera mount (part of the barrier filter assembly), and a tripod mount as well (Fig. 1).

PRECAUTIONS

Legitimate concerns with eye and skin safety arise in conjunction with the use of intense light sources. A potential for photic (photochemical or phototoxic) retinal injury is associated with exposure to intense blue



light. Calculations show that the BLUEMAXX™ systems are not intense enough to be hazardous to the skin and eyes, and you should have no particular concern at viewing the reflected beam or placing your skin into the beam. We do, however, caution against staring into the BLUEMAXX™ beam for extended periods of time.

PROCEDURE

Charging The Battery

Upon initial receipt of your unit, the 12V DC battery must be re-charged by using either the AC or DC accessory plug. A full charge will provide approximately 6 hours of full light output under most conditions.

12V DC Method—plug one end of the DC accessory cable into the jack on the rear of the housing above the pistol grip (Fig. 2). Insert the automotive-type plug into the accessory outlet in the vehicle.
Approx. charging time of 1 hour.

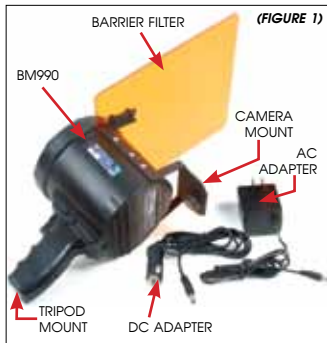
110V AC Method—plug one end of the AC accessory cable into the jack on the rear of the housing above the pistol grip. Plug the AC adapter into a convenient 110V AC outlet. *Approx. charging time: 4-6 hrs.*

A self-contained charging circuit prevents overcharging, so the light may be left overnight without damaging the battery.

NOTE: Recharge the battery after each use. Always store unit in a full charge state. If the unit is not used for long periods of time, recharge every 3 months.

Installing The Barrier Filter

The SUPER BLUEMAXX™ 3 light provides the excitation necessary to cause luminescence in certain materials. In order to visualize this luminescence, a barrier filter must be placed between your eyes and the target. You may choose to wear orange barrier goggles or the barrier filter supplied with the BMK990. To install the barrier filter, remove the four (4) thumbscrews from the mounting bracket located on the top of the unit. After lining up the holes of the filter and bracket, insert the thumbscrews and tighten (Fig. 3).



Operating The BM990

After ensuring the battery is fully charged and barrier filter in place, depress the trigger located in the pistol grip to activate the light for momentary ON (Fig. 4) and proceed with your search of the crime scene. If steady light is desired, fully depress the trigger and engage the locking mechanism located on the left side of the unit in the down position. Turn the light OFF by pushing the lock back up. **NOTE:** *If the trigger will not depress initially, check to see that the locking mechanism is in the upward position.*



FIGURE 3

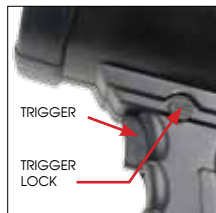


FIGURE 4



FIGURE 5

In order to facilitate photography, the BM990 comes equipped with a camera mount as part of the barrier filter assembly. Simply attach your camera to the unit with the mounting screw. If steady focus is required for longer exposures, use the tripod mount contained inside the bottom of the pistol grip (Fig. 5).

OPERATIONAL NOTE: The BM990, when used in conjunction with the orange barrier filter, will permit viewing of saliva, semen, urine, and materials treated with fluorescent dyes, powders, DFO, and other chemicals. Latent prints processed with DFO develop slowly if unaided and may be accelerated by applying heat to the latent print surface.



BLUEMAXX™ FORENSIC PHOTOGRAPHY

Not all substances are capable of luminescence. They will not luminesce at all, regardless of the light wavelength used, or may require excitation by specific wavelengths. Fortunately, many substances of primary interest at the crime scene do luminesce when exposed to radiation from a BLUEMAXX™ light source such as the BM990. Those substances that are non-luminescent or are weakly luminescent such as blood and palmer oils, may be made luminescent by bonding luminescent agents to them such as fluorescent powder and DFO. The photographs shown here are of latent prints developed with the SIRCHIE fluorescent powders and exposed to BLUEMAXX™ light. The maximum level of brilliance for optimum photographic fingerprint ridge detail may be obtained by varying exposure time. This type of photographic

enhancement is not possible with powder-developed fingerprints that have not been externally excited by a forensic light source.

CARE AND MAINTENANCE

Keep the unit clean by wiping with a damp cloth. DO NOT use chemicals or cleaning solvents as this may damage the housing.

Barrier Filter

The Barrier Filter is a transparent acrylic material selected for its spectral characteristics and durability. But like all plastics, the surfaces of this filter are subject to scratching. Minor scratches are generally not a problem unless photography through the filter is attempted. Polishing can reduce the effects of minor scratches and abrasions. **NOTE:** Replacement filters are available.

Lamp Replacement

The LED is rated at approximately 50,000 hours and should not require replacement under normal use. If for some reason the lamp does not light and the battery is fully charged, contact the factory for assistance at (919) 554-2244.

Fuse Replacement

The 12V DC accessory plug contains a 2-amp fuse in the automotive plug end. Simply unscrew the tip to remove blown fuse (Fig. 6).

Battery Replacement

The unit is equipped with a long-life, heavy-duty battery. Should the rechargeable battery ever need replacing, contact the factory for a replacement and proceed as follows:

1. Press down on the battery compartment latch and slide the cover toward the rear of the unit (Fig. 7).
2. Invert the unit and catch the battery as it slides out. **NOTE:** The battery contains LEAD and a strong ACID. Dispose of in accordance with all local, state and federal guidelines.



REDCHARGE™
LL601 treated
latent prints,
excited by
BM990
(4 sec. @ f/8).



GREENESCENT™
LL703 treated
latent prints,
excited by
BM990
(30 sec. @ f/5.6).



YELLOWESCENT™
LL705 treated
latent prints,
excited by
BM990
(8 sec. @ f/4).



FIGURE 6



FIGURE 7