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## TECHNICAL INFORMATION

### Mini BLUEMAXX™ III Kit Catalog Nos. BM250A, BMK250A

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#### BLUEMAXX™ SYSTEMS OVERVIEW

BLUEMAXX™ systems are illumination sources useful for performing fluorescent examinations on materials of forensic interest having excitation bands between 390 and 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.

BLUEMAXX™ systems work with any potential evidence having excitation bands between approximately 390nm and 520nm. BLUEMAXX™ systems are essential in area searches for evidence at the crime scene, and excellent for the photography of evidence after location. BLUEMAXX™ light sources provide the best results when used under subdued lighting conditions. Total darkness is not necessary to see the fluorescence produced from most items of evidentiary value.



## CAUTION

- The BM250A Mini BLUEMAXX™ Light Source may be used in conjunction with the application of fluorescent powders or chemicals. Before using this kit, consult the appropriate Material Safety Data Sheets (MSDS) found on our website at [www.sirchie.com/support](http://www.sirchie.com/support).
- DO NOT look directly into the light beam as this may cause serious injury to your eyes.

## HOW IT WORKS

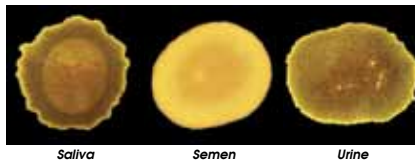
The Mini BLUEMAXX™ III LED illuminator emits light at a wavelength of approximately 455nm (blue region). This excitation source causes certain materials to give off weak fluorescence. When used in a totally darkened room, only the light emitted by the LED is present. This light frequency causes some materials to fluoresce, but this fluorescence is hidden or masked by the intense blue light. For this reason, BLUEMAXX™ alternate light sources employ an orange barrier filter between the objects being examined and your eyes. This filtration effectively blocks the blue light permitting viewing of the weaker fluorescence.

## INTRODUCTION

The Mini BLUEMAXX™ III Kit offers a convenient means of searching crime scenes for physical evidence that exhibits fluorescent properties. The light source in the kit provides an alternate light operating at or near 455 nanometers (nm), a light frequency known to be of value when seeking items of forensic interest. The kit contains all of the elements necessary for use in the field or crime lab.

Like our full-size BLUEMAXX™ light source, the new Mini BLUEMAXX™ III emits a high-intensity blue light (455nm) that can be viewed through the orange barrier filter goggles provided. The light is powered by two (2) CR123 type Lithium batteries and its light beam comes from a single, 3-watt LED (Light Emitting Diode) that is rated at more than 50,000 hours of lamp life. *NOTE: Leaving the lamp on for length periods will cause the instrument to become hot to the touch.* The BMK250A is excellent for locating and facilitating photographs of a variety of forensic evidence including physiological

fluids (urine, saliva and semen), and latent prints enhanced with fluorescent powders or dyes. The hand-held, machined-aluminum, self-contained light source measures 5.25" (13.3cm) in length with a barrel of only .75" (1.9cm) dia. and weighs a mere 3.55 oz. (100.6g).



### INITIAL SETUP/BATTERY INSTALLATION

Prior to using the kit for the first time, it will be necessary to install the batteries in the light source.

Two (2) CR123 lithium batteries are supplied with the kit. To install these batteries, unscrew the end-cap from the light source and insert them as shown to the right while observing the polarity. Replace the end-cap.



### USAGE

The lamp is controlled by a push button mounted in the battery compartment end cap. Press the button until it clicks. The lamp will remain ON. Press again to extinguish the lamp. For momentary, depress the button half way.

### PHOTOGRAPHY

Evidence photos may be taken using a standard 35mm or digital camera. The camera lens must be equipped with a barrier filter, which may be ordered from the factory. Lengthy exposures may be necessary, therefore we recommend that the camera be mounted on a sturdy tripod. The area must be darkened as much as possible. When using film (ASA400), begin with a trial exposure of  $f/5.6$  at  $1/2$  second and bracket exposures on either side of this value. If the camera is equipped with a full automatic mode (film or digital camera), use this mode for best results.



## 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. 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. The photographs shown to the right are of latent prints developed with SIRCHIE fluorescent powders and exposed to the 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. **NOTE:** *A standard 35mm camera and Kodak Ektachrome Elite 150 color slide film were used, and exposure times were varied.*

### BMK250A CONTENTS:

- 1- BM250A Mini BLUEMAXX™ Light
- 1- BMS300 Barrier Filter Goggles w/case
- 2- CR123 Lithium Batteries
- 1- BMK250ACC Black Copolymer Carrying Case w/molded foam inserts; Dimensions: 8.5" x 5.5" x 3.1875" (21.6cm x 14cm x 8.1cm); Weight: 1.58 lbs. (.7kg)



**REDCHARGE™ LL601 treated prints, excited by BLUEMAXX™ light—exposed for 4 sec. @ f/8.**



**REDESCENT™ LL701 treated prints, excited by BLUEMAXX™ light—exposed for 15 sec. @ f/5.6.**