
TECHNICAL INFORMATION

Micro **BLUEMAXX**[™] Catalog No. **BMMB100**

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.



CAUTIONS

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.

HOW IT WORKS

A Micro BLUEMAXX™ LED emits light with a wavelength near 450nm (blue). In a perfectly dark room, only the wavelengths emitted by the LED's could be present. Supposing that this light causes materials of interest to fluoresce weakly with wavelengths between 550-600nm (yellow-green), the weak fluorescence would be hidden or masked by the bright excitation light without the barrier filter. But, placing the barrier filter between your eyes and the illuminated area allows only wavelengths beyond the transmission edge of the barrier filter to pass. The light from the excitation source is absorbed, leaving only the weak fluorescence to pass through the filter to our eyes.

INTRODUCTION

Micro BLUEMAXX™ Systems are illumination sources useful for performing fluorescent examinations on materials of forensic interest having excitation bands near 450nm, including physiological fluids such as urine, semen and saliva, and materials treated with certain powders and dyes. These devices are especially useful in searching small areas for evidence at crime scenes.



No. BMMB100 Micro BLUEMAXX™ is provided in a handy carrying case which easily fits in standard and oversized shirt pockets.

OPERATION

The Micro BLUEMAXX™ is activated with a push button for momentary use or twist the cap for a steady burn. Remember that the area illuminated *must be viewed* through the orange barrier filter if fluorescence is to be seen, or that orange-tinted goggles must be worn. The Micro BLUEMAXX™ is powered by three (3) AAAA alkaline batteries. This will provide more than 300 hours of useful light.

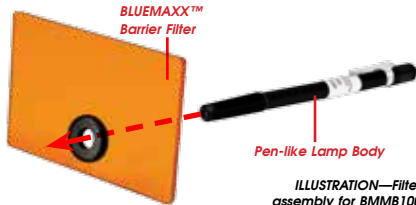
PHOTOGRAPHY

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.

CARE AND MAINTENANCE

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. Use a clean, soft cotton buffing wheel at low speeds. Fine alumina buffing compounds may be needed, followed by tallow and a final buffing from a compound-free cotton flannel wheel. Replacement filters are available.



ILLUSTRATION—Filter assembly for BMMB100

Bulbs

Best results are obtained with quartz envelope bulbs. Krypton or halogen gas and similar bulbs are highly preferable to standard incandescent bulbs.

BLUEMAXX™ Forensic Photography

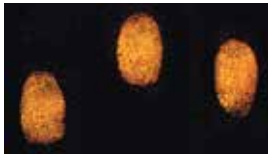
Not all substances are capable of luminescence. They will not luminesce at all, regardless of the light wavelength used, or may require excitation by specific wavelengths. Fortunately, many substances of primary interest at the crime scene do luminesce when exposed to radiation from a BLUEMAXX™ light 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.*

BMMB100 KIT CONTENTS:

- 1- Micro BLUEMAXX™ Forensic Light w/single LED (blue)
- 1- Orange Barrier Filter
- 3- AAAA Alkaline Batteries
- 1- Instruction Manual
- 1- Leatherette Case



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.