



Crime-lite[®]

A range of LED forensic light sources
for crime scene and laboratory applications

foster+freeman

Forensic Science Equipment



foster+freeman

Improving the Quality of Forensic Evidence

Foster + Freeman are innovators in the design and manufacture of systems for the examination of questioned documents, latent fingerprints, trace evidence and shoe prints.

Founded in 1978 the company's reputation has been built upon the development of leading edge forensic technology.

Foster + Freeman products are used by all major police forces and forensic science laboratories worldwide as well as government agencies, commercial and private organisations such as homeland security, immigration authorities, security printers, lottery companies, university departments and national libraries.

With offices in the UK and the USA, and a global network of agents and distributors, Foster + Freeman are able to provide customers with a high level of technical support, installation and training.

With the Crime-lite range of light sources Foster + Freeman have pioneered the use of high intensity LED illumination for the search, detection, and examination of forensic evidence.

Foster + Freeman Crime-lites offer many features that remain unmatched:

Hand picked LEDs selected for peak performance at each wavelength

Instantly recognisable quality of construction

100% light output throughout battery lifespan, no drop off

Worldwide product support

Handheld light sources

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Laboratory light sources

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Crime-lite[®] XL

The world's most powerful LED forensic light source

With 96 surface mount LEDs providing 40 Watts of radiant power, the Crime-lite XL stands head and shoulders above all competitive products in its class.

Fully portable and robust, the XL has been optimised for wide area examination of crime scenes and emulates the power density and effectiveness of a forensic laser at a fraction of the cost.

The range offers units with blue, blue-green, green and orange wavelengths with 10% intensity bandwidths of 40 to 70nm, effective in detecting blood, body fluids, drugs, fibres, explosive residues and stained fingerprints.

- **96 high intensity LEDs provide illumination unrivalled by any LED light source**
- **Reveals more evidence while dramatically reducing search times**
- **For intense close-up examination or wide-area search**
- **Rechargeable battery backpack or AC powered**
- **Supplied with anti-glare viewing goggles and camera filters** (see page 10 for details)

The effectiveness of the Crime-lite XL over a large area is demonstrated in this crime scene reconstruction.

- 1: Single LED light source
- 2: Crime-lite XL Blue

Both images photographed using a lens 495nm lens filter



Crime-lite® 82S

Powerful light sources for crime scene and laboratory

Where serious crime demands intensive crime scene investigation, the Crime-lite 82S range offers levels of illumination and ease of use that will almost certainly increase the quantity and value of evidence detected.

Each Crime-lite 82S features 16 LEDs handpicked for brightness and wavelength accuracy, ensuring consistent performance and effectiveness. Viewing goggles and camera filters supplied with the 82S range feature anti-glare coatings unique to Foster + Freeman. These improve effectiveness by suppressing auto-fluorescence from the basic filters.

- **Available in 9 wavebands:**

White UV Violet Blue Blue/Green Green Orange Red Infrared

- Intense shadow-free beam without hotspots
- Up to 3 hours operating time on a fully charged battery
- Constant light output regardless of battery drain
- Anti-glare viewing goggles and camera filters

Crime-lite 82S revealing semen on fabric through induced fluorescence:

1 White light no filter

2 Crime-lite 82S Blue with 530nm filter



Crime-lite[®] 82L low angle surface illumination

16 high intensity white LEDs mounted behind a cylindrical lens give a wide floor level light beam that is ideal for detecting surface debris and shoe prints.

A concept developed by Foster + Freeman, the Crime-lite 82L produces a 'sheet' of high intensity white light to reveal floor level evidence and is supplied with blue, green and red clip on filters to enhance contrast on coloured backgrounds.

- **Detects surface debris over a large area**
- **16 surface mounted high intensity LEDs**
- **Lightweight, telescopic pole available for prolonged floor searches**
- **Rechargeable battery provides up to 2 hours operation, rapid 22 min recharge**

1 Black floor tiles as seen in daylight 2 The same scene showing shoeprints using the Crimelite 82L



Crime-lite[®] 42S

Bi-colour LED light sources

The first high intensity bi-colour forensic Crime-lite for crime scene and laboratory applications.

The Crime-lite 42S, switchable between two arrays of 8 high intensity LEDs provides the forensic examiner with three illumination outputs in a single alternate light source.

Using a simple 3-way control the examiner is able to alternate between wavelengths or to use all 16 LEDs in combination to provide a third output waveband.

Crime-lite 42S light sources are available in the following combinations:

| | | |
|-----------------|---|----------------------|
| White 400-700nm | & | Blue 420-470nm |
| UV 350-380nm | & | Violet 395-325nm |
| Blue 420-470nm | & | Blue/Green 450-510nm |
| Blue 420-470nm | & | Green 490-560nm |
| Green 490-560nm | & | Orange 570-610nm |



www.fosterfreeman.com/crime-lite42.html

Crime-lite[®] 2

Single LED light sources

A range of lightweight LED forensic light sources effective at short range providing intense, even and shadow free illumination for locating and examining evidence.

The range includes a white light model for general search and eight narrow band light sources with wavelengths in UV, violet, blue, blue-green, green, orange, red, and infrared.

With thousands of units in active use by crime scene and forensic investigators worldwide the Crime-lite 2 has proven effectiveness and reliability.

- **Effective illumination from a single high intensity LED**
- **9 wavelengths - White, UV, Violet, Blue, Blue/Green, Green, Orange, Red & IR**
- **Compact and light-weight with rugged, splashproof IP64 housing**
- **Used by crime scene investigators worldwide**



www.fosterfreeman.com/crime-lite2.html

Crime-lite[®] ML2

Bench top magnifier with multi-wavelength illumination

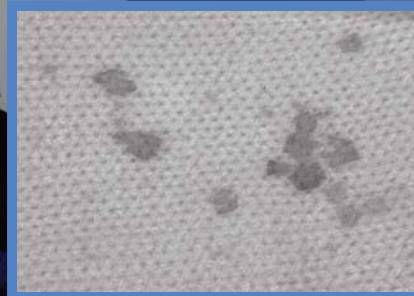
The new Crime-lite ML2 combines the versatility of multi-wavelength, high intensity LED illumination with wide area bi-ocular magnification to provide an effective bench top search and examination tool in the forensic laboratory.

The Crime-lite ML2 features 8 high intensity white LEDs for general search and a choice of up to 4 additional narrow band LEDs including: UV, Violet, Blue, Blue/Green, Green, Orange & Infrared.

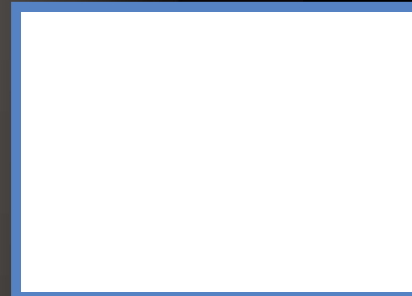
Designed for the examination and 'marking up' of large items of evidence in the laboratory, the Crime-lite ML2 effective in detecting body fluids, semen, bone and tooth fragments, fibres, drugs, explosives, accelerants and chemically treated evidence.

- Optimised for the examination of large items in the laboratory
- Choice of White, UV, Violet, Blue, Blue/Green, Green, Orange & Infrared
- Large bi-ocular lens providing nominal magnification of x 1.8
- Optional 5MP Vis-IR camera for use with IR illumination

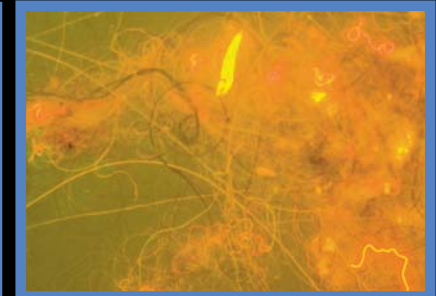
1 Blood under IR



2 Body fluids



3 Fluorescent fibres



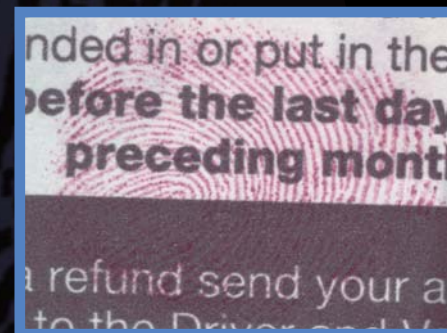
Crime-lite® 8x4_{MK2}

Multi-wavelength
photographic ring light

The Crime-lite 8x4_{MK2} is designed to meet the the varying demands of forensic photography enabling the operator to create the optimum illumination for all types of evidence and backgrounds, enhancing image contrast and definition.

The ring light features seven narrow bandwidth LED arrays, emitting light at peak wavelengths of 365, 410, 445, 480, 530, 590, and 640nm. These may be selected individually or in multiple combinations to create 98 different colours, enabling the operator to tailor illumination to suit the evidence. In addition, an array of white light emitting LEDs with a colour temperature of 6500K have 10 intensity settings.

- 8 Illumination sources, 32 high intensity LEDs, 98 colour-mix combinations
- Can be copy stand and tripod mounted for field use
- Optional bellows to shield ambient light



1 Fingerprint treated with ninhydrin



2 Background removal and enhancement using the DCS 4, fingerprint examination system utilising the Crime-lite 8x4_{MK2}

Crime-lite Applications

Multi-wavelength illumination

The ability to detect and examine evidence that is near invisible to the naked eye can be greatly improved using a high intensity light source of the appropriate wavelength.

Crime-lites provide a range of wavelengths for the detection of most types of trace evidence and widely used latent fingerprint treatments.



Body fluids: Semen on fabric

While many body fluids are naturally fluorescent under UV it is more common to search for this evidence using blue light in combination with a 495nm filter in order to eliminate background fluorescence.



Trace evidence: Human teeth

Bone fragments and teeth may be difficult to detect with the naked eye but can be seen to glow brightly when viewed using UV illumination.



CRIME-LITE ILLUMINATION WAVELENGTH

| | WHITE 400-700nm | UV 350-380nm | VIOLET 395-425nm | BLUE 420-470nm | BLUE/GREEN 450-510nm | GREEN 490-560nm | ORANGE 570-610nm | RED 600-650nm | INFRARED 800-900nm |
|-------------------------------|-----------------|--------------|------------------|----------------|----------------------|-----------------|------------------|---------------|--------------------|
| PHYSICAL EVIDENCE | | | | | | | | | |
| Blood stains | ✓ | | ✓ | ✓ | | | | | ✓ |
| Blood spatter | ✓ | | ✓ | ✓ | | | | | ✓ |
| Body bruising & bite marks | ✓ | ✓ | ✓ | | | | | | ✓ |
| Body fluids | | ✓ | ✓ | ✓ | | | | | |
| Bone & tooth fragments | | | | ✓ | ✓ | ✓ | | | |
| Hair | | | ✓ | ✓ | | | | | |
| TRACE EVIDENCE | | | | | | | | | |
| Fibres | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Gunshot residues | | | | ✓ | ✓ | | | | ✓ |
| Some drug residues | | ✓ | ✓ | | | | | | |
| Accelerants | | | | ✓ | ✓ | ✓ | | | |
| Redwop | | | | ✓ | ✓ | | | | |
| Nanoparticles | | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| FINGERPRINT TREATMENTS | | | | | | | | | |
| DFO | | | | | ✓ | ✓ | ✓ | | |
| Greenwop | | | | | ✓ | | | | |
| Rhodamine 6G | | | | | ✓ | | | | |
| Basic yellow | | | ✓ | ✓ | | | | | |
| Acid yellow | | | | ✓ | | | | | |
| Ardrox | | ✓ | | ✓ | | | | | |
| Magnetic red powder | | | | ✓ | | | | | |
| Ninhydrin | ✓ | | | | | ✓ | | | |
| GENERAL | | | | | | | | | |
| General mixed debris | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| General contrast search | ✓ | | | | | | | ✓ | |
| Shoeprints & dust marks | ✓ | | | | | | | | |

Product Features

Handheld light sources

All Foster + Freeman handheld Crime-lites are constructed of anodised aluminium for strength and durability and are classified to EN62471:2008, the European standard for optical radiation safety.

- All Crime-lites provide 100% light output without drop-off throughout the battery charge
- High intensity LEDs are near indestructible and feature a typical lamplife of 50,000 hours
- Available individually and in cased sets

| | No. of LEDs | LED Output Power** | No. of Wavelengths | Rechargeable Battery | AC Mains Option | Weight |
|----------------|-------------|--------------------|--------------------|----------------------|-----------------|--------|
| Crime-lite 2 | 1 | 1.2W | 9 | Yes | Yes | 490g |
| Crime-lite 82S | 16 | 19W | 8 | Yes | Yes | 560g |
| Crime-lite 82L | 16 | - | 8 | Yes | Yes | 900g |
| Crime-lite 42S | 8 + 8 | 19W | 7 | Yes | Yes | 560g |
| Crime-lite XL | 96 | 115W | 4 | Yes | Yes | 1.75Kg |

Laboratory & Photographic light sources

The Crime-lite 8x4Mk2 is available as a stand-alone product and with Foster + Freemans DCS 4 digital fingerprint capture and enhancement workstation.

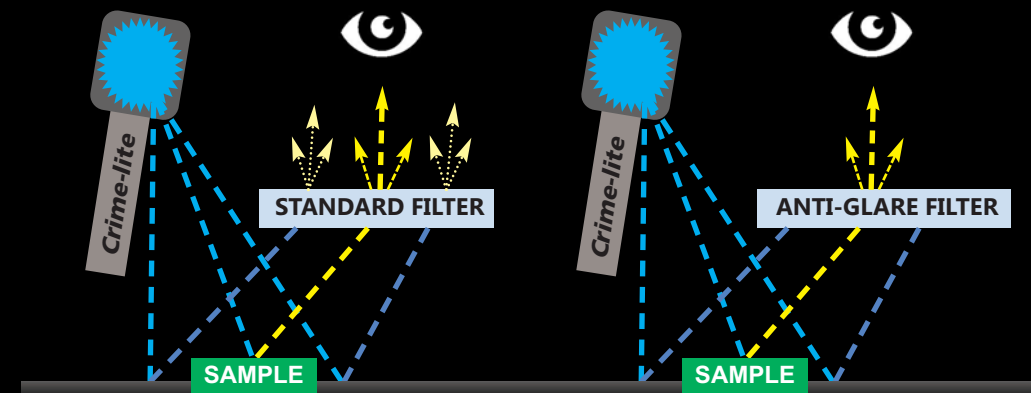
Crime-lite 8x4Mk2 can be run using Crime-lite 82S battery packs. Batteries and a complete range of accessories can be seen on the following pages.

| | Max. no. of LEDs | LED Output Power** | Colour combinations | Rechargeable Battery | A/C Mains |
|-------------------|------------------|--------------------|---------------------|----------------------|-----------|
| Crime-lite ML2 | 40 | 19W | 40 | No | Yes |
| Crime-lite 8x4Mk2 | 32 | 4.8W | 98 | Yes | Yes |

Anti-glare viewing goggles & camera filters

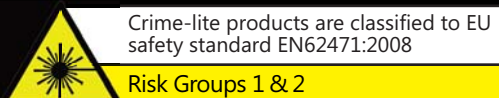
Crime-lite anti-glare camera filters and viewing goggles are essential for the examination of weakly fluorescent evidence and are supplied as standard with all Crime-lite 82S and XL cased sets.

Foster + Freeman camera filters and viewing goggles are manufactured from Schott glass with an additional coating to suppress auto-fluorescent emissions from the Schott glass itself, thus ensuring maximum optical performance when using high power light sources.



Reflected light from background induces fluorescence in standard filters

Anti-glare filters do not fluoresce ensuring maximum definition of evidence



* Maximum LED output power, dependent upon wavelength

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