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	Document Manager: Kristin Schelling	Approved By: Jeffrey Nye

## 1.6 Foster + Freeman Crime-lite® 82S Alternate Light Sources

### 1.6.1 Foster + Freeman Crime-lite® 82S Blue Alternate Light Source

The Crime-lite® 82S blue alternate light source (ALS) produces light of wavelengths ranging from 420-470nm (peak of 445nm) and can be used to search for body fluid stains such as semen and saliva. Body fluids, with the exception of blood, emit fluorescence when exposed to this range of light wavelengths.

#### 1.6.1.1 Using the Crime-lite® 82S Blue ALS

Ensure that the Makita® battery is charged using the supplied Makita® battery charger.

Slide the battery adaptor onto the battery and mount the blue ALS onto the battery adaptor.

In a darkened environment, shine the light on the surface of the item being examined while wearing yellow or orange goggles to protect the eyes from exposure and properly observe any fluorescence. Note any areas of fluorescence that are observed.

#### 1.6.1.2 Photography Using the Crime-lite® 82S Blue ALS and UV-Vis-IR Camera

In order to photograph any fluorescence that is observed, installation of the **Crime-lite®** Cam software is required.

Ensure the lens cap has been removed from the camera and slide the UV-Vis-IR camera onto the head of the blue ALS. Turn the dial behind the lens on the camera to the "VIS I I I" setting. Alternatively, in order to photograph an item as seen by the human eye with the appropriate goggles, the circular yellow GG495 filter can be screwed onto the camera lens. The internal "VIS I I I" filter must be turned off when using the GG495 filter externally.

Connect the UV-Vis-IR camera to a computer housing the **Crime-lite®** Cam software using the supplied USB cable. Open the **Crime-lite®** Cam software. A live display from the camera should be immediately viewable.

In Device Settings, select the "Crime-lite 82S" as the device, "Blue" as the light source, "GG495" as the ML filter, and "VIS Only I I I" as the camera filter.

The image may be labelled by entering the case (Lab Number), and exhibit (item identifier) names into the Case Details field on the left side of the display. Selecting the check boxes in the upper right-hand corner of Device Settings, Case Details, and Notes will result in the display of the information in those fields on the captured image. Other software programs, such as Adobe Acrobat Pro and Microsoft® Office PowerPoint®, may also be used to add labels to these images.

Once an area of interest is identified, select "Capture Image" to take the photograph. Click on the thumbnail of the image at the bottom of the screen to view the photograph. Select "Save As" from the menu at the top of the screen to name, choose a location to save, and choose a format for the file (.tif,

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.bmp, or .jpg). Select "Live" from the upper left-hand corner of the display in order to capture another image.

All images captured shall be placed in the object repository of the case record.

## 1.6.2 Foster + Freeman Crime-lite® 82S Infrared Alternate Light Source

The Crime-lite® 82S Infrared alternate light source (ALS) produces light of wavelengths ranging from 800-900nm (peak of 860nm) and can used to search for blood stains. Blood stains absorb light when exposed to this range of light wavelengths and may appear darker than the surrounding surface.

### 1.6.2.1 Using the Crime-lite® 82S Infrared (IR) ALS

Ensure the Makita® battery is charged using the supplied Makita® battery charger.

Slide the battery adaptor onto the battery and mount the IR ALS onto the battery adaptor.

In order to visualize and photograph possible blood stains, installation of the **Crime-lite®** Cam software and use of the UV-Vis-IR camera are required.

Ensure the lens cap has been removed from the camera. Slide the UV-Vis-IR camera onto the head of the IR ALS. Turn the dial behind the lens on the camera to the "IR I I I I" setting.

Connect the UV-Vis-IR camera to a computer housing the **Crime-lite®** Cam software using the supplied USB cable. Open the **Crime-lite®** Cam software. A live display from the camera should be immediately viewable.

In Device Settings, select the "Crime-lite 82S" as the device, "IR" as the light source, "None" as the ML filter, and "IR Only I I I I" as the camera filter.

Shine the light on the surface of the item being examined. The pale green glasses should be worn in order to protect eyes from exposure. Using the computer display to visualize areas of interest, note any areas of light absorption that are observed. Darkness is not required to use the IR light for the visualization of blood stains.

### 1.6.2.2 Photography Using the Crime-lite® 82S Infrared ALS and UV-Vis-IR Camera

Once an area of interest is identified, to photographically record the image, select "Capture Image" to take a photograph. Click on the thumbnail of the image at the bottom of the screen to view the photograph. Select "Save As" from the menu at the top of the screen to name, choose a location to save, and choose a format for the file (.tif, .bmp, or .jpg). Select "Live" from the upper left-hand corner of the display in order to capture another image.

The image may be labelled by entering the case (Lab Number) and exhibit (item number) names into the Case Details field on the left side of the display. Selecting the check boxes in the upper right-hand corner

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of Device Settings, Case Details, and Notes will result in the display of the information in those fields on the captured image. Other software programs, such as Adobe Acrobat Pro and Microsoft® Office PowerPoint®, may also be used to add labels to these images.

All images captured shall be placed in the object repository of the case record.

## **1.6.3 Maintenance of the Foster + Freeman Crime-Lite 82S® Alternate Light Source**

### **1.6.3.1 Cleaning**

The Crime-Lite 82S® alternate light source equipment should be cleaned before and after each use to prevent contamination.

Alcohol wipes or sanitizing wipes may be used to clean the outside surfaces of the lights and associated accessories. Due to its abrasive properties, avoid the use of bleach and bleach-based sanitizing products.

### **1.6.3.2 General Maintenance**

The metal key should remain in the handle of each Crime-Lite 82S® light. The lights are inoperable without this key. The battery adaptor can be attached to the base of the handle with the key in place.

The Crime-Lite 82S® lights and accessories should be stored in the corresponding case when not in use.