

Technical Procedure for the UltraLite ALS

1.0 Purpose - This procedure describes how to examine evidence with the UltraLite ALS.

2.0 Scope - This procedure applies to all evidence that is examined with the UltraLite ALS. The UltraLite ALS can assist in searching for latent fingerprints, palmprints, footprints, footwear impressions and other impressions. Fingerprint residue, certain biological fluids, trace evidence and other compounds and substances may fluoresce naturally when exposed to different wavelengths of light. In addition, the UltraLite ALS may be used with fluorescent dyes to develop and enhance latent impressions. The UltraLite ALS may be used in the Laboratory and when providing technical field assistance.

3.0 Definitions – N/A

4.0 Equipment, Materials and Reagents

4.1 Equipment and Materials

- UltraLite ALS with protective goggles
- Camera equipment

4.2 Reagents

– N/A

5.0 Procedure – Items of evidence shall be subjected to the light source prior to using processing techniques if using the light source for inherent luminescence examination. This will serve to detect any inherent latent impressions and to reveal the color and the intensity of any background fluorescence. The background fluorescence will allow the analyst to determine which fluorescent dye will be appropriate to use in processing evidence. The UltraLite ALS shall also be used in conjunction with fluorescent dyes and chemicals to develop and photograph latent impressions. This unit is designed for use in hard to access areas in which larger light sources would be difficult to use.

5.1 Assembly

- 5.1.1** Attach the desired head assembly to the UltraLite ALS body. Insert the head in a straight and slow manner to avoid damaging the contact pins. Hold the head against the handle and rotate the locking ring on the handle until it is hand-tight. **DO NOT TWIST THE HEAD.**
- 5.1.2** Insert either a battery pack or the power adapter pack into the bottom of the handle. If using the power adapter pack, plug in the jack from either the wall or car power supply into the bottom of the pack.

5.2 Operation

- 5.2.1** This unit features an energy conserving “sleep mode.” After five minutes of inactivity, the unit will automatically shut off the indicator lights and enter this mode.
- 5.2.2** If the unit is in sleep mode, press the ON/OFF button once to “wake up” the unit.
- 5.2.3** Press the ON/OFF button once to activate the light.

5.2.4 Press the Power Setting button to increase the power output to the desired setting. The power increases from setting 1 to 2 to 3 to 4 and then cycles back to 1. The green lights on the neck of the unit indicate the power setting that is currently in use.

5.2.5 Press the ON/OFF button to deactivate the light.

Note: The yellow light on the neck will illuminate when the battery pack has 20 % of its full charge left. Actual time remaining will vary depending on which head assembly is in use.

5.3 Wavelength and Filter Selection

5.3.1 The UltraLite ALS has different heads for particular wavelengths. The current head assembly is for crime scene search and is in the 455 nm range.

5.4 Examination of Evidence

5.4.1 While wearing goggles, scan the item of evidence with the light source. A strong hand held magnifier may be used to enhance visualization of the latent impressions.

5.4.2 If a latent impression is detected, immediately note the location and direct the light source away from the area.

5.4.3 Position the area of interest under the camera and place the appropriate filter over the lens of the camera (see technical procedure for the camera used).

5.4.4 Direct the light source over the area to be photographed and begin photography.

5.4.5 After each photograph is taken, redirect the source away from the impression to avoid destruction of the area or surface. Prolonged exposure to the beam may cause the latent impression to photo-degenerate over a short period of time until eventually the impression disappears.

5.4.6 After the impression is photographed, further imaging techniques shall be applied to enhance or develop additional impressions, if applicable (see Section Image Processing Procedure).

5.5 Disassembly

5.5.1 To remove the head, rotate the locking ring on the handle until the head becomes loose. Pull the head straight away from the handle.

5.5.2 To remove the power or battery pack, squeeze both tabs on the sides of the pack and pull straight out.

5.6 Standards and Controls – N/A

5.7 Calibration – N/A

5.8 Sampling – N/A

5.9 Calculations – N/A

5.10 Uncertainty of Measurement – N/A

6.0 Limitations - N/A

7.0 Safety – Eye protection shall be worn when using a laser and/or alternate light source. This also applies to any other individual who may be in the same room or area. This is particularly important when examining reflective surfaces as the light source may be reflected and result in eye damage.

7.1 Never look directly into any light source as this will cause eye damage.

7.2 Do not expose the light source to the skin; although it will not immediately cause harm, the light source may have long term effects with prolonged exposure.

8.0 References

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9.0 Records – N/A

10.0 Attachments – N/A

Revision History		
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