

Technical Procedure for the Portable Ultra-Violet Light Source

1.0 Purpose - This procedure describes how to examine evidence with the Ultra-Violet Light Source.

2.0 Scope - This procedure applies to all evidence that is examined with the Ultra-Violet Light Source. The Ultra-Violet Light Source can assist in searching for latent fingerprints, palmprints, footprints, footwear impressions and other impressions. Fingerprint residue and other compounds and substances may fluoresce naturally when exposed to ultra-violet light. In addition, the ultra-violet light source may be used with fluorescent dyes to develop and enhance latent impressions. The Portable Ultra-Violet Light Source 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

- Ultra-Violet Light Source
- Camera equipment

4.2 Reagents – N/A

5.0 Procedure – If using the light source for inherent luminescence examination, items of evidence shall be subjected to the light source prior to using processing techniques.

5.1 Examination of Evidence

5.1.1 The Ultra-Violet Light Source is operated by a simple on/off switch.

5.1.2 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.

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

5.1.4 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).

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

5.1.6 After the photograph is taken, direct 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.

5.1.7 After the impression is photographed, further techniques shall be applied to enhance or develop additional impressions.

5.2 Standards and Controls – N/A

5.3 Calibration – N/A

5.4 Sampling – N/A

5.5 Calculations – N/A

5.6 Uncertainty of Measurement – N/A

6.0 Limitations - N/A

7.0 Safety – Eye protection shall be worn at all times a laser and/or alternate light source is being used. This applies to all individuals 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, there may be long term effects with prolonged exposure.

8.0 References

Hammond, J. *Cyanoacrylate Ester Fuming for the Development of Latent Prints*. Loctite Corporation.

Kobus, H.J., M. Stoilovic and R.N. Warren. "Luminescent Enhancement Procedures for the Detection of Latent Fingerprints." *Proceedings of the International Forensic Symposium on Latent Prints*. (July 1987): 45-49.

Salares, V.R., C.R. Eves and P.R. Carey. "On the Detection of Fingerprints by Laser Excited Luminescence." *Forensic Science International*. Vol. 14: 229-237 (1979) .

Watkin, J.E. "Alternate Lighting Methods of Detecting Latent Prints." *Proceedings of the International Forensic Symposium on Latent Prints*. (July 7-10, 1987): 39-44.

Walton, A.N. "A Technique for the Detection and Enhancement of Latent Prints on Curved Surfaces by the Use of Fluorescent Dyes and Painting with Laser Light (Beam)." *Proceedings of the International Forensic Symposium on Latent Prints*. (July 7-10, 1987): 121-123.

Misner, A.H. "Ultraviolet Light Sources and Their Uses." *Journal of Forensic Identification*. Vol. 41, 3: 171-175 (June 1991).

9.0 Records – N/A

10.0 Attachments – N/A

Revision History		
Effective Date	Version Number	Reason
09/17/2012	1	Original Document