

Digital Infrared Images to Enhance GSR Patterns¹

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After attending this presentation, the participant will understand: (1) a procedure for recording digital infrared images of GSR patterns on dark and multi-colored fabric, and (2) the advantages and disadvantages of using digital infrared photography.

A plume of GSR creates a visible powder pattern on light colored clothing at specific muzzle-to-target distances. However, GSR patterns on dark or multi-colored clothing are not visible because of the background color of the cloth. Near infrared images of GSR patterns produce an improved image of the GSR pattern.

Cardboard targets were covered with dark and multi-colored fabric for testing. To produce GSR patterns on the fabric, a model 5906 Smith & Wesson 9 mm pistol with 9mm Federal ammunition was used. One target covered in white cloth was used as a standard for comparing the visible GSR pattern to the digital infrared GSR pattern images.

Digital infrared images were photographed with a 35 mm Nikon D-70 camera with an 18-70 mm f 3.5 – 4.5 G ED-IF AF – S DX Nikkor lens and a 67 mm #87 infrared Tiffen filter. Experimental flash and camera settings were used to determine the most effective exposure. The results provide the investigator with a digital infrared photographic procedure to record GSR patterns.

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